By Harald Michalsen

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Introduction

We have decided to release version 29.1 forthcoming season, summer 2011. This requires some revisions of the current user manual for version 28. Due to time limits (Mid-April -11 now) this cannot be done in a satisfactory manner. What follows is a set of supplementary notes to current user manual, and we refer to parts of the manual where we have made modifications. Of course what we write here overrules older documentation. Mainly these notes are intended for users with some experience, but we also make a few comments to make the initial start of using Tplan simpler for the beginner. In quite a number of places we have tried to simplify the use both for beginners and more experienced users. By that we mean we eliminate facilities which you normally don't need depending on how you judge your own experience level. (See later). Almost no one except System support should classify themselves as Advanced since some options here may have undesirable consequences if you are the least uncertain about what you are doing.

Closing note (27/05-11): I don't think that the content in this paper is too bad and this is badly needed. I am not too proud of the layout of this document, but considering this has been produced in 30 days I am not ashamed of it either.

Start of Tplan

There have been two main methods for the opening dialog in Tplan. Now we recommend all to use what we call New opening dialog where you save all your data in just one *.tpd – file. Assume you are going to enter new data from scratch. You open a blank data set and the very next thing you do is to click on the third button in your main button bar: Create a New school. The following dialog appears:

🌃 Create new se	chool		
School code	CUT (3 letters or digits)		
School name	St. Cuthbert	(30 chars)	
Address	Greatna road	(30 chars)	
Description	2011/12 (7 chars) 10 💌 Days		
Individual instruction planning			
🖙 Read planning data			
🗸 ок		? <u>H</u> elp	

Fill in this obligatory info and in particular try to define a school code which might be unique for your own school. I represent system support receiving data sets from quite a number of different schools, and I have to inspect the individual registers in your data. When all schools have the same default code (HMX), I get problems in keeping different school's data apart. Please, save me from that quite unnecessary problem.

By clicking Ok in the above dialog you enter the grid for obligatory school parameters filled with default values. Modify these to suit your own school data and you are ready for data entry as

explained in the current user manual. These rules will not be changed here except from some very special timetabling mechanisms.

SELECT LANGUAGE

Before starting data entry you should do a little more initial work.

Select tab sheet Functions and you get this dialog:

Select the language you prefer.

Fun	ctions	Control	Run	Maintenance	Compressed
	Settin Språk	gs / Sprog / L	.angua	ge	3
	Gener Room	ate blocks alternative	from s es	ubjects	
	Switch	n between	norma	l and full screen	F11
	Select	user level			-

Go to Settings > Errors and select Complete. That produces considerable information which you normally need in the start, but you should reduce all this info when you finally have a complete and formal correct data set.

SELECT USER LEVEL

The following dialog appears:

Select either 1 or 2 here while 3 almost assume you have discussed that with me.

User level	×
Select your level <u>1</u> - Beginner (For first time users) <u>2</u> - Standard (For users with some knowledge) 	
\bigcirc <u>3</u> - Advanced (For the advanced user)	
✓ <u>□</u> K X <u>C</u> ancel	<u> श</u> ∐elp

The reason for the choice above is to eliminate from the beginner some facilities which only might seem confusing in the initial stages.

In particular you will notice the difference of your choice in the set of run options being available. (Advanced contains a set of options of a very special nature, and I will not document that for the moment.)

Importing data from version 28.6 to version 29.1

If you have *.tpd –file from 28.6 all your basic data entry are automatically compatible with version 29.1 However the end result i.e. final table from 28.6 is not compatible with 29.1. The main reason for that is that we have completely reorganised the internal data structure. I didn't think this would matter much, but there will surely be someone who wants last year's table in version 29.1. I shall give a helping hand provided you have some data experience:

- Unzip the desired *.tpd- file in the same folder as this file.
- You will find here a file JUMOD.nnn (nnn= school key) in this folder. Enter the folder in DOSenvironment. Do this Copy-command:
- COPY JUMOD.nnn JUMOD28.nnn
- Start Tplan ver 29.1. Go to Functions>Settings>Save and Check: Use classic school opening dialog.

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- Go File Menu and click Open. You are transferred to the Old opening dialog. Click Add here and enter your school data.
- Run: TRANSFER + ANALYSIS but don't build on partial table. Now you have your basic situation in 28.6 transferred to 29.1.
- Go to Run options and check Old Iteration + Import ver. 28
- Run ANALYSIS + Build on partial table. Now the file Jumod28.nnn you made are transferred to ver. 29.1
- Inspect Compressed and that should be your table from last year. Uncheck the options mentioned above.
- Save your data as a zip-file. Restore to normal run conditions and open your saved zip- file
- Save that as a *.tpd file and now you have the complete table from last year in version 29.

(Perhaps Lasse could make that simple process automatic?)

The run menu (Initial part of chapter 5 in old manual) The new simplified run menu looks like this:

Setup	×
✓ Iransfer registers	
 Analysis program Build on partial table 	
✓ Main program	
Run mode	Phase of main program
 Standard 	Allocating the timetable
Interactive	Final adjustments
Directives for main program	Dptions for main program
📠 ок 🛛 🗶	Cancel ? Help

We have 3 distinct phases in run menu:

Transfer registers.

This part is similar to version 28 with a few exceptions:

The checking of formal (grammatical) errors is now done by Wintp and not Hmtp. This check is either done by using the Inspect button or by a transfer run. Any formal error will stop a further run and you are transferred to a survey showing the errors and by clicking on an error, you are easily led to where the error occurred. There is just one way of forcing a transfer regardless of grammatical errors i.e. a specific run option for that. The inexperienced user should not use that possibility but concentrate on finding the errors to simplify what may happen in continued runs. However, there

are few cases where the grammatical errors don't tell what really goes wrong, and it may be necessary to force a transfer to get a better survey.

The output file Lisy is split in two parts: Lisy and Lisys. Initially you will be interested in both files, but as you do quite a number of new transfers it is perhaps sufficient with the more compressed and vital info in file Lisy.

Analysis Program

The additional dialog here has been removed and the parameters here are now defined by a run option. We only need to specify if we a creating a table from scratch or continuing from a partial table already created.

Main Program

Here there is a set of additional parameters which must be specified:

Run mode: (Standard or Interactive)

In almost all cases you should use Standard mode. Earlier I had high hopes for the Interactive mode where timetabling is stopped temporarily at once when you get a kickout, and the intention is to adjust this immediately. That might often lead to dubious manual guesswork, but in some cases I have found the technique useful, say the last part of a large timetable where only pure class activities remained to be allocated.

PHASES OF THE MAIN PROGRAM

This is an important choice which you always must consider, and this is linked with a couple of important run options. The Allocation phase uses options: Indirect room allocation + New room allocation. The Adjustment phase substitutes this with Absolute room allocation. The first set of options is definitely the best options while you gradually build a complete timetable and possibly builds on a previous partial table. Sooner or later you reach a stage where all activities are assigned in time, but there are still problems with some teacher/room changes. Now you must definitely switch to Adjustment phase to keep firmly locked all the teacher/room changes you are going to make, and you in addition have to return to a new transfer/analysis/main run for continued runs. However, you risk that this continued run will not be as optimal as if you were in Allocation phase. On the other hand a return to this phase means that you lose all the efforts with room adjustments. **So you have to make a choice!!**

To sum this up:

Try to make a complete table in TIME using the Allocation phase and postpone as long as possible teacher/room- changes. When you eventually solve all kickouts switch to Adjustment phase, and you are stuck with that for the remainder of the process; in particular if you do many room changes. (It could happen that these are few, and you could produce a new table in the better Allocation phase starting from scratch with rooms.)

Directives for main program

This leads to the following dialog:

🔛 Directives for main program				
Directives for main program	Directives for room distribution			
Steering Own steering Standard 1 Standard 2 99 Maximal Number of steps 999 Maximal Number of placements 99 Acceptable number of gaps?	Collect: Class Teacher Subject Strict requirements for rooms?			
С ОК ХО	Cancel ? Help			

This is a considerable simplification of earlier dialogs for main program and room allocation. We only use the most important parameters here and less frequent parameters may be defined by some additional option. Definition of parameters in above dialog:

Steering

Normally you use your own steering as explained in user manual. Alternatively you might initially use a standard steering. (I might modify these in the future.)

Maximal Number of steps

This is the standard way of creating a partial timetable from a set of directives as explained in user manual.

Maximal Number of placements

This is an alternative and less frequent way of only making only a partial timetable i.e. the main run is stopped after a fixed number of assignments. This is intended for the case where a specific steering directive refers to a large number of activities and you don't want to assign all these in the same step. (This parameter might also be useful for system support.)

Acceptable number of gaps

For a medium complex timetable you will normally want to create tight teacher tables and you normally select a value in the region 2- 5. For other school structures you can't afford to require or are not interested in requiring tight teacher tables. In that case use the value 99. If you use a value of 0 or 1, you trigger some very special mechanism which gives a considerable reduction in teacher gaps but which may have undesirable side effects like many more kickouts. In general I don't recommend the use of these facilities.

Principles for collection of rooms

For traditional "class rooms" you want classes, teacher or subjects in the same room as much as possible. (That varies much from school to school.) This last principle means that you keep same subject in same room at the expense of having both classes and teachers to move more around than

possibly needed (There are also some options for allocating rooms like: Maximal packing where you will have fewer lacking rooms but which increases more movements of classes and teachers.)

Strict requirements for rooms

Normally I recommend you to check this parameter. If it turns out that get too many lacking rooms, rerun room allocation and uncheck this parameter and see how much the situation improves.

RUN OPTIONS

This is now a separate choice in Run dialog (and there is also a separate button for that in Main Bar) The content here depends on whether yourself say you are beginner or require standard use.

Run options in beginner mode

TR Options for main program	
Commands	Parameters
 Ignore syntax errors Follow run in DOS environment Indirect room allocation Absolute room allocation New room allocation Same SUBJECT to same room SUDOKU 	
Category for selections	Phase of main program
Pure class activities	 Allocating the timetable Final adjustments
V Follow journal line for line during run	
▼ Follow journal continually (Do not wait for key to be pressed)	
Display selected parameters prior to HMTP motor run	
✓ OK X Cancel	? Help

Run option	Command	Explanation	Comment
Ignore syntax errors	FORCE	Forces a Transfer Run even if there are formal errors	As a beginner you should normally concentrate on correcting the formal errors to avoid later confusion. However there are cases where you need the option to get sensible info about what is going on.
Follow run in DOS environment	ch	While running a DOS window will open showing info about the	Definitely, I use this option almost obligatory. I can read much more from

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		progress of the current run.	that than the average user. But ALL can see that something happens (or possibly not happens) For that reason alone I recommend all to use this option. (Our current Progress Bar is rather pointless and does not tell much)
Indirect room allocation	RSKIP	Used as a link between analysis program and main program. Current room table is only used as a logical matrix securing that all room requirements in various periods are respected while no direct allocation of room takes place. This secures the main program maximal freedom for continued timetabling while older manual adjustments of rooms will be lost	The recommended option to use when creating class/teacher tables and getting rid of the kickout list.
Absolute room allocation	RKEEP	This is the opposite of indirect room allocation. All manual teacher/room changes are kept in the continued timetabling process. This might easily remove some flexibility in the continued timetabling	Obligatory option in case you insist on preserving all manual teacher/room changes you have done till now
New room allocation	RNEW	Creates from scratch a new room table	Often a useful option to use once more when you have solved your kickout list and are ready for the final room adjustments.
Same SUBJECT to same room	FAGPRI		An unneeded option now since you can require the same in directives to main program.
Sudoku	SUDOKU	Needed option in to play with the Sudoku puzzle	

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Run options in standard mode.

TR Options for main program	
Commands	Parameters
Ignore syntax errors Follow run in DOS environment Indirect room allocation Absolute room allocation GENERATE NEW TK's Block neighbour days Same SUBJECT to same room Old iteration Join single periods New comp. rules MODULE TABLE STEPWISE ROOM ALLOCATION SPLIT SITE RULES Desires Week Balance SUDOKU	
Category for selections	Phase of main program
Pure class activities 🔹 👻	 Allocating the timetable Final adjustments
Follow journal line for line during run	
Follow journal continually (Do not wait for key to be pressed)	
Display selected parameters prior to HMTP motor run	
✓ OK X Cancel	? Help

In standard mode we mention these additional run options:

Run Option	Command	Explanation	Comment
GENERATE NEW TKs	TKPAR	Creates additional TK's just as before in the Analysis dialog. This option has additional parameters and an example is shown below.	This is an important option, but we recommend beginners only to use default values.
Block neighbour days	NABO	The assignment of an activity on a day will block the activity on neighbour days	A very strict requirement which must be used carefully: in particular if you have a 5- day school week.
Old iteration	ITOLD	The link between the analysis and main program is made by means of internal logical matrixes and the table you see onscreen is ignored.	The old way of linking between various parts of Tplan. Might also be very useful these days in case you get lost in the table onscreen.
Join single periods	DSPAN	Tries to assign single periods in contiguous positions	This is useful in a typical case where the spanning rules are 2-2-2-2 and the table consists

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			of mainly multiple periods and few singles. In such a case the singles make up some "implicit" sequential which is important to consider. (If many singles don't use this facility)
New comp. rules	Сомр	These notes will show an alternative way of specifying components. To use that, this option is required.	Till further notice we accept both old and new way of specifying components
MODULE TABLE	SVMOD	Tries to assign activities for classes in contiguous periods to reduce the possibility of potential gaps. Also considers the possibilities for assigning staggered lunch breaks	If the teaching unit is small for instance 20 min., we get a rather particular timetable problem. The main bulk of the teaching will be large and varying multiple periods. Such tables will as a necessity contain some gaps in class tables, but we want to reduce these as much as possible. This option is VITAL for such timetables.
STEPWISE ROOM ALLOCATION	TWOSTEP	Room allocation is done in two steps. In the first stage we only allocate rooms for multiples and the second stage is allocation of rooms to remaining singles. The idea is to fulfil more room requirements failing due to the period breakdown.	This option tries to strengthen what we call Strict Requirements in Run menu.
SPLIT SITE RULES	SPLIT4	This option covers the following split site situation: There is a geographical distance between 2 schools which shares teachers. Shift from A to B can only take place at a specific time of the day, and teachers shifting can't teach in contiguous periods in different schools when the shift takes place.	This option has parameters for defining when the shift shall take place and specification of what is school A and B. Other split site conditions may be defined and will also require a special run option.
Desires Week Balance	WBAL	For 10 day week only. Originally we required that 10- day table had an even load of all subjects in the two weeks. That was initially an almost absolute requirement.	10- Days tables relax in any case a complex timetable. By using this option in addition you relax the complexities further.Could be recommended if you

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By using this option we state that even spread is a highly	have a really complex timetable
desirable requirement	

This is the set of run options I wish to mention for the moment. There are quite a number of additional run options. Some of these are outdated, some are for system support and some covers fairly special timetabling problems. These latter might later be reintroduced and future additional run options must also be expected.

Example of creating TK-parameters

TR Options for main program		
Commands	Parameters	
Ignore syntax errors	Parameter	Value
Indirect room allocation	Number of new TK's	100
Absolute room allocation	Min Per	0
Generate new TK's	Max Difference	30
Same SUBJECT to same room		
Old iteration		
New component rules		
Stepwise room allocation		
Split site rules		
SUDOKU		
	Phase of main program	J
Category for selections	 Allocating the timetab 	le
Pure class activities 🗸 🗸	Final adjustments	
Follow journal line for line during run		
Follow journal continually (Do not wait for key to be pressed)		
Display selected parameters prior to HMTP motor run		
✓ OK X Cancel		? Help

The parameters to the right are exactly the same as explained in former dialog to Analysis program

THE START OF A TIMETABLE RUN

Having filled in the parameters in previous paragraphs you are ready for a run by clicking OK in Run menu. The following information is listed:

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This is a survey of what run and run parameters you are using. It is strongly recommended that you ALWAYS check this info before running.

ERROR CHECKING (Inspect button or Transfer program)

In many years both Wintp and Hmtp have performed these "grammatical" checks. Sometimes this has given a little confusion when starting a Transfer being stopped completely unnecessary. We have changed the rules for that:

- Wintp alone is completely in charge of all "grammar" checking. Transfer is immediately stopped each time a formal error is detected. I have found these checks to be very reliable and even better you are easily transferred to the spot where there is an error. I personally use these checks to a large extent and am very glad for this thorough cleaning of data. The beginner or average user should be even happier by getting rid of the main bulk of errors before starting serious timetabling.
- It happens that HMTP must overrule all warnings coming from Wintp meaning that a transfer is attempted regardless which errors Wintp might detect. That is done with a run option (which ought to be used with some reservation.) The typical cases are these:
 - a. In the odd case Wintp report about errors about things which Hmtp permits.
 - b. In some cases Wintp reports correctly about errors which I know have no effect for the continued timetable run.

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c. In some cases there might occur grammatical errors of a complex nature for instance inconsistencies between block register and subject register. The only way to find such errors is to force a complete transfer and carefully check what really happened.

As we gain more experience I expect the two first points above while I expect that we will have to live the last point.

We will next show an example where we artificially have entered some formal	Controlling registers before calling the motor.	
errors:	000:01:0003: 2001/2002 is too long, max 7 chars	
These looks scaring but wait a little.	Teacher register 001:01:0003: ALxx is too long, max 3 chars 001:01:0004: AMxxx is too long, max 3 chars	
We click on the first error in teacher register and get this listing.	Class register 002:02:0002: 1 aaa is too long, max 3 chars 002:09:0008: AB does not exist in register for teachers 002:09:0009: AB does not exist in register for teachers 002:09:0011: AB does not exist in register for teachers	
We immediate see there is something wrong with teacher AB and AL.	002:09:0020: AB does not exist in register for teachers 002:09:0021: AB does not exist in register for teachers 002:09:0027: AB does not exist in register for teachers 002:09:0033: AB does not exist in register for teachers	
We remove the x'es here and continue.	Room register 003:02:0003: Groups must be at the end if the register 003:01:0003: 002 Empty groups are not allowed.	
	Subject register 004:01:0002: 1 a is not allowed as class-symbol 004:01:0003: 1 a is not allowed as class-symbol 004:01:0004: 1 a is not allowed as class-symbol 004:01:0005: 1 a is not allowed as class-symbol 004:06:0005: TExx is too long, max 3 chars	•

	Initials	Teachers	Pos Salary Max Max
	NN	name	TP Controlling registers before calling the motor.
001	ABx	Arne Bonnesen	Obligatory information
002	ALxx	Anne Sofie Overgaard Lif	000:01:0003: 2001/2002 is too long, max 7 chars
003	AMxxx	Arne Michelsen	- · · · ·
004	AN	Birgit Andresen	1 eacher register 1001-01:0002: Al yw is too long, may 2 chars
005	AP	Annette Post	001:01:0004: AMxxx is too long, max 3 chars
006	BA	Benedikte Neergaard	
007	BE	Anders Bergholt	Class register
008	BI	Birgit Heinskou	002:02:0002: Taaa is too long, max s chais
009	BJ	Anne-Vibeke Bjergstrøm	002:09:0009: AB does not exist in register for teachers
010	BK	Birgitte Holch Knudsen	002:09:0011: AB does not exist in register for teachers
011	ВМ	Bo Morell	1002:09:0020: AB does not exist in register for teachers
012	BR	Kresten Bruun	002:09:0027: AB does not exist in register for teachers
013	BS	Birgit Svane	002:09:0033: AB does not exist in register for teachers
014	BT	Birthe Tandrup	Boom register
015	BW	Bente Wodschow	003:02:0003: Groups must be at the end if the register
016	BØ	Kasper Pretzmann	003:01:0003: 002 Empty groups are not allowed.
017	СВ	Cecilia Bjørkman	Subject register
018	CD	Casper Deleuran	004:01:0002: 1a is not allowed as class-symbol
019	СК	Connie Knudsen	004:01:0003: 1a is not allowed as class-symbol
020	CL	Claus Levinsen	004:01:0004: 1 a is not allowed as class-symbol
021	CS	Conni Steensgård Nielsen	004.01:00005: TExx is too long, max 3 chars
022	ст	Claus Peter Thormann	

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Schoo	ol Teachers	Classes	Rooms Subje	cts Blocks Periods Steering Compressed Full Text Tables List
×	Class	New	Sec-	Controlling registers before calling the motor.
×	name	name	tor	Obligatory information
0000	1a	1aaa	1s	000:01:0003: 2001/2002 is too long, max 7 chars
0000	1Ь	1Ь	1s	
0000	1c	1c	1s	Teacher register
0000	1d	1d	1s	001:01:0004: AMxxx is too long, max 3 chars
0000	1u	1u	1m	
0000	1v	1v	1m	Class register
0000	1w	1w	1m	1002'02'0002' Taaa is too long, max 3 chars
0000	1x	1x	1m	002:09:0009: AB does not exist in register for teachers
0000	1y	1y	1m	002:09:0011: AB does not exist in register for teachers
0001	1z	1z	1m	UU2:U9:UU2U: AB does not exist in register for teachers
0001	1p	1р	1h1	002:09:0027: AB does not exist in register for teachers
0001	1q	1q	1h1	002:09:0033: AB does not exist in register for teachers
0001	1r	1r	1h1	Poor register
0001	2a	2a	2s	003:02:0003: Groups must be at the end if the register
0001	2Ь	2Ь	2s	003:01:0003: 002 Empty groups are not allowed.
0001	2c	2c	2s	Cubication sinter
0001	2u	2u	2m	004:01:0002: 1 a is not allowed as class-symbol
0001	2v	2v	2m	004:01:0003: 1 a is not allowed as class-symbol
0001	2w	2w	2m	004:01:0004: 1 a is not allowed as class-symbol
0002	2x	2x	2m	004:06:0005: Telvy is too long, may 3 chars
0002	20	20	2m	

Next we check the class register and get this listing:

It is quite obvious that we have wrongly entered 1aaa instead of 1a. By correcting that most of the errors above disappear. What remains is room register:

Schoo	ol Teachers	Classes	Rooms	Subje	🌇 Controlling registers before calling the motor. 📃	
	Room	Room/	Func-		Obligatory information	
	name	Group	tion		000:01:0003: 2001/2002 is too long, max 7 chars	
0000	001				Teacher register	
0000	002	G			001:01:0003: ALxx is too long, max 3 chars	
0000	003				001:01:0004: AMxxx is too long, max 3 chars	
0000	004		STUE		Class register	
0000	005				002:02:0002: 1aaa is too long, max 3 chars	
0000	006		STUE		002:09:0008: AB does not exist in register for teachers	
0000	10Ь				002:09:0011: AB does not exist in register for teachers	
0000	011		1SAL		002:09:0020: AB does not exist in register for teachers	
0000	012		1SAL		002:09:0021: AB does not exist in register for teachers	
0001	013		1SAL		1002:09:0033: AB does not exist in register for teachers	
0001	014		1SAL			
0001	015		1SAL		Room register	
0001	016		1SAL		1003:01:0003: 002 Empty groups are not allowed	
0001	017		1SAL		coston coost doz Emply groups are not allowed.	
0001	018		1SAL		Subject register	
0001	19a				1004:01:0002: 1 a is not allowed as class-symbol	
0001	19Б		1SAL		004:01:0004: 1 a is not allowed as class-symbol	
0001	19c				004:01:0005: 1a is not allowed as class-symbol	
0001	020		2SAL		004:06:0005: TExx is too long, max 3 chars	-

It is quite obvious that the G for room 002 is completely wrong and we remove that. Now almost all errors we started with have disappeared. Ok, this was an artificial example and real life is more

complex than that. However, having spent a lifetime looking for such rubbish errors, I consider the shown technique as an enormous improvement.

LISTINGS FROM A TIMETABLE RUN

By clicking on Tab sheet: Listings (and arrow for drop down box) you get access to the various listings from a timetable run:

		•
SELECT	F1	ILE
LIFEL	-	Latest overview
LISY	-	Result of transfer
LISYS	-	Suplementary result of transfer
LIAN	-	Analysis of timetable
LIANS	-	Supplementary analysis of timetable
LIANW	-	Manual errors and/or compromises
LIAN1	-	Analysis of timetable
LISCH	-	Compressed table for classes and teachers
LISAL	-	Compressed table for rooms
LIO	-	Warnings after Full text adjustments
LIH	-	Assignment Journal
LIH1	-	Assignment Journal
LIROM	-	Journal for room distribution
LISLUT	-	Timetable as text file

This is considerably modified compared with earlier versions of Tplan for several reasons:

Since we have removed all ASCII output of complete tables, these are no longer needed.

We have also removed some files which we expect that a standard user don't needs. (These files may still be accessed if you classify yourself as Advanced User.)

On the other hand we have split the older file Lisy in two files Lisy + LisyS and the older file Lian is split in 3 files Lian + LianS + LianW. The idea is to simplify life for the user. Earlier I noticed that since files Lisy and Lian could contain a lot of information, many users overlooked parts of info which were important. Hopefully this reorganization makes important information simpler to detect.

The output listings from Tplan are for the moment:

LIFEL: Latest result from Control Menu.

LISY: Result from Transfer. If you ask for complete warnings this is all info from a Transfer

LISYS: When the result of a Transfer is satisfactory we move supplementary info from transfer to this file and only keep vital info from Transfer in file Lisy.

LIAN: Result from Analysis. If you ask for complete listings this is all info from an Analysis.

LIANS: The initial info in LIAN might appear huge and difficult to survey. As soon as the Analysis appears to be rid of most errors, get most of the info to LIANS, and what remains in LIAN are vital info perhaps needing further checking.

LIANW: Manual errors and/or compromises. Initially this file contains inconsistencies between Block/subject – register and Period – register. In the later adjustment phase this contains vital info about the various compromises you have made and which perhaps need further fine tuning.

LIAN1: Analysis of timetable- Supplementary run. Very seldom used information.

LISCH: Compressed tables for classes and teachers. Still an old favourite of mine and in old DOSdays the most important result from a timetable run. These days it offers you a fast way of creating a paper copy of the table you have onscreen.

LISAL: Compressed tables for rooms and contains also info about lacking rooms (or the latter is moved to file LIANW)

LIROM: Journal for the room allocation. Fairly seldom you need this information, but in case I feel that room allocation is lousy, I will inspect this file, and then I will often find what is wrong with the original room register.

LIH: Assignment journal from main program. Shows step by step what happened in the previous main run. For the experienced user of Tplan this info might be very valuable and in many cases teaching you to give a better steering for an improved run.

LIH1: Assignment journal from main program- Supplementary run. Less important information. It is normal that this file might contain a few additional assignments. In case there are many assignments here, I might suspect that something is wrong.

LIO: Warnings after a full text adjustment. This is an older file, and it is in many ways an equivalent to the more recent file LIANW and should in theory contain the same information. Time has not permitted me to revise the file LIO and these days I rely more on the file LIANW.

LISLUT: Timetable as a text file. The table onscreen is converted to a paper copy. To be honest I have never used this info since my preference is files like LISCH and LISAL.

6 Manual adjustments of timetables

(Drag/drop - techniques)

INTRODUCTION

This chapter is a provisional replacement of Chapter 6 in current User Manual which is more or less outdated. The facilities explained here is perhaps the main reason for creating Tplan29.1, and the implementation of these facilities has also been by far the most time-consuming part of our recent developments of Tplan 29.1

Most of my professional work since the mid sixties has centred on the task of manual adjustment of (compressed) timetables since I had to make a living one way or another. I will not tell about the techniques of yester, but surely since the early 90-ties I dreamt about a facility which would allow me to point at some activity and then place it in a different place in the timetable. That would indeed speed up the manual work when adjusting a timetable. I wrote a routine for that in pre-Windows time, and confess that my effort was a disaster since the computing world was not that progressed at that point in time. Then we got Windows and I got other problems. We created Tplan 26 (no concern for drag/drop) and Tplan 28 (where drag/drop were superficially considered but skipped because of all other new facilities in 28.)

Initially I was very pleased with the manual adjustment possibilities in Tplan 28, but as the years went by (say 2008) I felt a growing uneasiness as we still lacked drag/drop which now was common in almost any Windows software, Drag/drop with current standards is in itself a trivial operation, However, we had additional problems since the info we collected from a drag/drop had to be sent to a different program system, and there the info had to be converted to logical matrixes for evaluation of timetabling consequences and these results had to be presented onscreen to allow the timetabler to decide the continued action.

One weak point in the former Tplan 28 was that it was fairly slow in the final adjustment phase and how could we consider a fast drag/drop within such a context?

Lasse and I had both operating routines for the final part of Tplan, but both had overlooked the need for speed in that phase. (I.e. both had made lousy solutions.). There was just one way out of this mess:

The internal data structure of Tplan (Wintp/Hmtp) had to be redefined.

In 2008 we discovered an important additional facility.

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We could operate with a **"floating" Kickout list** meaning that the Kickout list may either be onscreen simultaneously as the timetable or it may be closed down with the table remaining. This opens a new world for doing drag/drop between Kickout list and the timetable.

That was our starting point autumn -08 and finally in spring -11 we are ready to present the result. (We have exceeded expected time limit, but it had to be done, and I am far from disappointed with the end result.)

The facilities we explain in the continuation are in principle little new compared with version 28 which has similar facilities. But I have said version 28 runs slow when adjusting. Some of the dialogs are quite awkward to use and many has problems with using them in the best way. I know very well that old hands with timetables tries to use other methods for the last phase and beginners often get problems there..

The general progress in computing has reduced run times in version 29 with a factor 4 compared with older versions of 28.

Registers Error Other Save Colours Cor	npressed <u>Timetable</u> Export Individual
Print compressed table Print from position 1 Print to position 6 Image: Comparison Image: Compa	Content of cells in compressed table Display empty class columns Display empty teacher columns Display empty room columns Display full class name rag_drop.

If you go to Functions > Settings>Compressed, you get the following dialog:

By checking: Use 64-bit version of HMTP, and you have a 64-bit PC, you reduce the run time with a further 20 - 30 %.

Version 29 has some improved algorithms and some improved facilities. However, far more important than that, is the drastic reduction in manual effort for completing a timetable. As said I have spent my entire professional work with adjusting timetables. Hopeless to give a factor for how

much reduction in manual work using version 29, but surely I am willing to guess a factor of at least 4 here too. I guess that this last fact is **more interesting for any average user with an average complex timetable** than any algorithmic improvement in Tplan for the past 10-12 years.

The presentation here will mainly mention **the way I am using drag/drop** and for all practical purposes this is how I work with KomprGrid (I.e. Compressed timetable) and KtempGrid (I.e. a subset or selection of columns in KomprGrid.) Skimming through the pages of older chapter 6 in Manual, I feel now that we were showing too many alternative ways of adjusting tables. I also found some of the examples longwinded and boring. Here I limit my scope to these things:

- The environment (i.e. screen interface) where we are using drag/drop.
- The mechanics of using drag/drop with some simple selected examples
- How to apply drag and drop in real life. Again some examples more complicated and some general advice is given, but no attempt to complete a table.

The rest is left to the reader's imagination. Most of the thing I show is in KomprGrid and KtempGrid will also function in other grids, but here I can't guarantee all is free of bugs. I have now spent thousands of hours debugging drag/drop in Tplan **my way**, and I have experienced more mess onscreen than I like to talk about. So therefore: If you insist on doing adjustments in a different way than me, **the user is hereby warned!!**

When skimming through current chapter 6 in current User manual, I will mention that it was written when we introduced version 28. At that point in time I had high hopes that the simplest way to complete a timetable was to run the main program in what I call Interactive Mode (I.e. Stop a main run temporarily at once you get a kickout and adjust that immediately before continuing the main run.) Further experiences taught me that this could be a dubious technique in many cases as it often involved some manual guesswork, and I learnt that Tplan is usually far better than me for spotting problems in the continuation. Therefore I am now more in favour of tackling a complex table in a stage by stage manner by defining sensible steering directives and rank the priority levels as good as possible.

6.1 Presentation of a Compressed Timetable

- And a few simple examples of drag/drop

🏆 1- Tplan - SAUDA UN	IGDOMSSKOL	E [914] [Regi	stered version	1]	- 6-			- 🗆 <mark>- X</mark>
<u>Files Edit</u> Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Compressed <u>H</u> elp								
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Table	90	10A	10B	10C	RØD		Displau kicked out activities	
MON 2 910 - 955	§ HKNM 4	NO 1	NO	× NOMA 2	9B EN		Display Netted out detrines	222
MON 3 1005 - 1050	§ HKNM 6	# SKEV	# SKEV	# SKEV			Display not all activities	YYY
MON 4 1120 - 1205	× NAEN 1	# SKEV	# SKEV	# SKEV			Display erased activities	
MON 5 1215 - 1300	¥ NAEN 2	# TV 1	# TV 1	# TV 1			Display parked activities	
<u>MON 6 1310 - 1355</u>	SAF	# IV 1	# TV 1	#1V 1			Display selected activities	
<u>TUE 1</u>	MUS	NAT	× ENNA 1	EN	10B × ENNA 1			
TUE 2 910 - 955		NO 1	[#] ENNA 2	⁸ NOMA 3	10B [©] ENNA 2		Select pos V	
TUE 3 1005 - 1050	KIIII	KHL	SAF	NAT				
TUE 4 1120 - 1205	KUH	NUMA 5	R NUMA Z	SAF 8 NOMA 4			■ R ● [1/1]: 9C NOMA 3	
TUE 5 1215 - 1300	KUH	SAF 3	# TV 1	# TV 1			9C MA BRU 05	
WED 1	CAE	H IV I					9C MAST HEL GR	
WED 2 910 955	DAF NAEN 2	* ENNA Z	KOH	MA				
WED 3 1005 - 1050	RIO	Ø NOMA 1	NO	КОН	JD EN			
WED 4 1120 - 1205	§ HKNM 1	КВИ	КВИ	КОН				
WED 5 1215 - 1300	§ HKNM 1	KRØ	KRØ	SAF				
WED 6 1310 - 1355	§ HKNM 3	X NOMA 2	MA	KRØ				
THU 1	× NOMA 2	КОН	MA	NAT	B*			
THU 2 910 - 955	X NOMA 1	КОН	SAF	MUS	B*			
THU 3 1005 - 1050	# SKEV	NOMA 5	NO	NO	B*	÷		
· · · · · · · · · · · · · · · · · · ·	IL OVELL	CULL A		loir.	100 EV			
Compressed Table (CTR	RL + F5)							

The above figure shows a selection of a compressed timetable in manner which I strongly recommend you to use in a similar manner. The vital new thing in this figure is:

You see onscreen simultaneously the compressed timetable to the left and the kickout list to the right. This latter may be onscreen or off-screen by clicking ctrl + F7. That is why we call it a "floating" kickout list (You would normally prefer to have the list onscreen as long as this list is not empty)

The normal colours in the in timetable are:

Black on cyan. This activity is lectured by only one teacher, meaning of course that these activities are easiest to move around. We name such activities Pure Class activities.

White on light blue. "Small parallel" The sum of classes and teacher are 3 or 4. To some extent such activities may be moved around

White on dark blue. "Large parallel" The sum of classes and teachers is at least 5. You can only in the early stages of the timetable move such activities with ease. In the later stages they are almost impossible to move.

Notice also that the colours are used exactly the same way in the kickout list to show you what sort of kickout you have. Normally one kickout is represented by just one line in the kickout list. If you want to see all details in a kickout you "blow it up" by clicking on the + to the left of the activity and close that that by clicking on the - sign (see fig 1)

In addition we might use the following special symbols:

- # The activity is preassigned
- *B Class/teacher/room is directly blocked in this position
- ** Class/teacher/room is indirectly blocked in this position
- § The activity is included in a sequence requirement.
- ^x The activity is included in a same-day requirement
- \ The activity shall be assigned on the boundary (border)
- = An activity to be assigned evenly on two weeks has the same no. of periods in both weeks.
- + If this activity has 1 period more in week 1 (++=2 periods more)
- If this activity has 1 period more in week 2 (-- = 2 periods more)

Furthermore I think there is a detail fig 1 which I feel is important: In the compressed table I have tried reduce the cell content as much as possible, but on the other hand I am interested in the special symbols just mentioned above. (The current User Manual explains how to define the cell content). Call this a personal preference, but I have been working with this for 50 years and know the importance of having as compressed presentation as possible while looking for a solution of your various kickouts. In the final stages I will remove special symbols but make the cell content more complete in other ways.

An alternative way of presenting a partially finished timetable is as follows:

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TP 1- Tplan - Bjertnes vo	gs [041] [Registered	version]				
<u>F</u> iles <u>E</u> dit Form <u>a</u> ts	Functions Control	<u>R</u> un <u>M</u> aintenance	e Com <u>p</u> resse	ed <u>H</u> elp		
School Teachers Teac	cher pools Classes R	looms Subjects Bloc	sks Periods S	Steering Compressed Table Full Text T 🔹 🕨		
Table	1444	1AAB	🔺 📝 Display k	sicked out activities		
MON 1	2VF033 ØH 302	2VF033 JNI 303	Display r	vot laid activities 222		
MON 2 0855 - 0940	2VF034 ØH 302	2VF034 JNI 303	Display r			
MON 3 0950 - 1035	1VF021 HAS 303	1VF021 PKG GYN	Display e			
MON 4 1035 - 1120	1VF021 HAS 303	1VF021 PKG GYN	Display p	barked activities		
MON 5 1150 - 1235	A-time 302	A-time 303	Display s	elected activities		
MON 6 1235 - 1320	ENG NB 302	ENG HAS 303				
<u>MON 7 1330 - 1415</u>	1VF011 JG 303	1VF011 MF 305	Select p	🕫 🔻 🔜 🖪 F2 S		
MON 8 1415 - 1455	1VF011 JG 303	1VF011 MF 305				
TUE 1	1VF023 HAS 303	1VF023 GYM2	E E E			
TUE 2 0855 - 0940	1VF023 HAS 303	1VF023 GYM2	E E E	[1/1]: 1AB NAT		
TUE 3 0950 - 1035	2VF031 ØH 302	2VF031 JNI 303	E E E	[172]: 1AC NO		
TUE 4 1035 - 1120	2VF032 ØH 302	2VF032 JNI 303		[2/2]: 1AC NO		
TUE 5 1150 - 1235	NAT POA NAT	NAT KHØ FYS		[1/2]: 3PĂ MATNAT		
TUE 6 1235 - 1320	NAT POA NAT	NAT KHØ FYS		3PÅ MATNAT GM 310 "Matematikk		
TUE 7 1330 - 1415		NO AF 303		3PÅ MATNAT JG NA "Naturfag"		
TUE 8 1415 - 1455	ØKON TB 302	NO AF 303		2/2]: 3PÅ MATNAT		
WED 1	ENG NB 302	NAT KHØ FYS		[1/2]: 1HA YNO		
WED 2 0855 - 0940	ENG NB 302			[2/2]: 1HA YNO		
WED 3 0950 - 1035	ØKON TB 302	INFO KTJ		1/2 1: 2BU PSYK		
WED 4 1035 - 1120	ØKON TB 302	INFO KTJ	i i − R	2/2 1: 2BU PSYK		
WED 5 1150 - 1235	A-time 302	A-time 303	H-R	1/2 1: 2TØ YNO		
WED 6 1235 - 1320	KØ PKG GYM2	NO AF 303	÷.	2/2 1- 2TØ YNO		
WED 7 1330 - 1415	KØ PKG GYM2	NO AF 303		1/2 1- 2EK KOMM		
WED 8 1415 - 1455	1VF011 JG 303	1VF011 MF 305				
THU 1	NO NB 302	ENG HAS 303		[1/2]. 2CK KOMM		
THU 2 0855 - 0940	NO NR 302	ENG HAS 202				
MAIN PROGRAM COMP	LETED			4		

Fig. 2

This user has preferred more complete cell content than I recommend in compressed tables but skipped the special symbols I like (but you don't get a better survey to solve kickouts this way.) The kickout list to the right is no as scaring as it looks and it shows an **important new convention**:

Each single period in a multiple period is listed as a separate kickout. When you then are inserting these periods back in the compressed table, a double would then require two operations but time loss here is very small compared with what you gain in FLEXIBILITY and SIMPLICITY. For instance to place a kickout of a double period might possibly be found by assigning it as two separate singles, and likewise a kickout of two singles of same activity might eventually be adjusted as a double period. In very many cases such compromises are quite acceptable (or needed)

We give an explanation of the kickout list in fig 2:

- 1AA NAT and 1AB NAT are 2 kickouts of single activities [1/1]

- 1AC NO is a kickout of **one** double period [1/2] and [2/2]

- 3PÅ MATNAT is also a double period and from the colour we see that this activity is a small parallel. We have blown up the first period to show the complete content of this activity.

The remainder of the kickout list are several kickout of simple double periods making the list a lot less scaring; in particular since this school is not too strict about the period breakdown.

For the moment our selection is 1AA NAT (notice black dot on this activity)

To get a start with drag/drop we will adjust a few activities in fig 2 and start with 1AA NAT and click on the button named P4 in fig 1. We get the following dialog:

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POA	Room NA	Activity NAT	Day
asses Teachers Booms IAAA 1AAB 1AAC 1AAC 2AAA 2AAA 2AAB 2AAC 3AAA 3AAB 3AAA 3AAB 3AAA 3AAB 3AAA 3AAB 3AAA 3AAB 3AAA 3AAB 3AAA 3AAA		nclude in selection Sector - Year Select all Select none	Pos Select position Select position Category All activities Only activity Pure class activities Small parallels

Our selection from the kickout list is shown in upper left corner and our only action is to select in the right down corner: Pure class activities (since 1AA NAT self is a pure class activity). We click OK and get this **selection** of compressed table:

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🏆 1- Tplan - Bjertne	s vgs [041]] [Regist	tered ver	sion]	1	
Files Edit Format	s Functi	ons Co	ntrol R	un Mai	intenance	e Compressed Help
			لعالكار		┣曲	
School Teachers T	eacher nor	ols Class	es Boor	os Subie	ects Bloc	cks Periods Steering Compressed Selection Full Tex • •
	1	1				
Selection	1888	POA	TB	NB	PKG 🔺	🔪 📝 Display kicked out activities 🛛 🚯 🚯 🚯
MUN 1	2¥F033					Display not laid activities
MON 2 0855 - 0340	195021		2000		10.00	Display not fail downlos
MON 4 1035 - 1120	1VE021		2444		1444	
MON 5 1150 - 1235	A-time					Display parked activities
MON 6 1235 - 1320	ENG	1ELA	2888	1AAA		Display selected activities
MON 7 1330 - 1415	1VF011	2AAA		1HSA	3AAE	
MON 8 1415 - 1455	1¥F011	2AAA		1HSA	3AAE	Select pos 🔻 🔜 🖪 F2 S
TUE 1	1¥F023	1ELA	2AAA			
TUE 2 0855 - 0940	1¥F023	1ELA	2AAA			
TUE 3 0950 - 1035	2VF031				1888	
TUE 4 1035 - 1120	2¥F032					
TUE 5 1150 - 1235	NAT	1444		3AAB	1SAA	
TUE 6 1235 - 1320	NAT	1444		3AAB	1SAA	
TUE 7 1330 - 1415	awou	1ELA				IIIII III III III III IIII IIII IIIIIII
TUE 8 1415 - 1455	UKUN	IELA	IAAA			
VED 1	ENG	2AAB		1444	1MEA	
VED 2 0855 - 0940	ENG	ZAAB	14.4.4	IAAA	IME A	
VED 4 1025 - 1120	ØKON		10.0.0		ZAR	
WED 5 1150 - 1235	Ø.time		IAAA			
VED 6 1235 - 1320	кя	1FLA	2888		1888	
VED 7 1330 - 1415	KØ	IELA	2888		1888	
VED 8 1415 - 1455	1¥F011		2AAA			
THU 1	NO		2888	1888	1HSA	[⊕ · <mark>K</mark>) [1/2]: 2EK KOMM
THU 2 0855 - 0940	NO		2AAA	1AAA	1HSA	
THU 3 0950 - 1035	1¥F011					
THU 4 1035 - 1120	1¥F011					
THU 5 1150 - 1235	NAT	1888			2AAC	
<u>THU 6 1235 - 1320</u>	NAT	1AAA		3AAB	2AAC	
THU 7 1330 - 1415	A-time					
<u>THU 8 1415 - 1455</u>	A-time					
FRI 1	INFO		1AAA	3AAB		
FRI 2 0855 - 0940	INFO		1AAA	3AAB		
FRI 3 0950 - 1035	ENG			1444	3AAL	
EBI 5 1150 1225	A-time			IAAA	JAAL	
FRI 6 1235 - 1320	NO		2000	1000		
FBI 7 1330 - 1415	NO	2888	2444	1444	3PÅ/ T	7
<					•	
SELECT 1AA POA N	NA NAT	CAT:	4			

We see that 1AA is available in TUE 7 while actual teacher POA is teaching elsewhere in TUE 7. We also see tables for other teachers in pure class activities in 1AA. From this figure it shouldn't be too difficult to spot a possible compromise, but we will show how Tplan could lead you to a solution. (In the general case things may be far more complicated than in the above figure.). We click on the P4 button once more and get the same dialog as before:

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Selection of a	election	Deen	A _10, 10,	Actual position
	POA	NA	NAT	TUE
Classes T 1AAA 1AAB 1AAA 2AAA 2AAA 2AAA 3AAA 3AAA 3AAA 3AAA 3PÅA 1SAA 1SAA 1SAA 1HSA 1HSA 2BU/4 1BYA 2EKA 1HELA 2EKA 1ME/4	eachers Rooms		Include in selection Sector - Year Select all Select none	Pos 07 Select position TUE 07 Category All activities Only activity @ Pure class activities @ Small parallels
~	ок		🗶 Cancel	? Нер

From a dropdown list we select TUE 7 (our actual period) in the upper right corner and click OK. We get this **colour selection** now:

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TP 1- Tplan - Bjertnes	vgs [041]	[Regist	ered vers	ion]			
Files Edit Formats	Functio	ons Co	ntrol Ru	un Mai	ntenance	Compres	ssed Help
	() ()	- Ve	_ (m) _	6	Film	m	
				<u> </u>		ب الغ	
School Teachers Te	eacher poo	ls Classe	es Room	is Subje	cts Block	s Periods	Steering Compressed Selection Full Tex
Selection	1888	POA	ТВ	NB	PKG 🔺	Dia-law	
MON 1	2VF033				1888	Visplay	
MON 2 0855 - 0940	2VF034				<u>1AAA</u>	Display	not laid activities
MON 3 0950 - 1035	1VF021		2AAA		1AAA	🔽 Display	erased activities
MUN 4 1035 - 1120 MON 5 1150 1225	1¥FU21		ZAAA		TATATA	📃 Display	parked activities PPP
MON 6 1235 - 1320	ENG	1ELA	2888	1444		📃 Display	selected activities SIS
MON 7 1330 - 1415	1VF011	2AAA		1HSA	3AAE		
MON 8 1415 - 1455	1¥F011	2AAA		1HSA	3AAE	Select	pos 🔻 🔚 🖪 F2 S
TUE 1	1¥F023	1ELA	2AAA				
TUE 2 0855 - 0940	1¥F023	1ELA	2AAA		_	🖻 R) 🔴	[1/1]: 1AA NAT
TUE 3 0950 - 1035	2VF031				1444	i ⊞… <mark>K></mark>	[1/1]: 1AB NAT
THE 5 1150 - 1235	ZVFU3Z NAT	10.0.0		266B	15 8 8	⊞ <mark>K</mark>)	[1/2]: 1AC NO
TUE 6 1235 - 1320	NAT	1444		3AAB	ISAA	i de ∎ B	[2/2]: 1AC NO
TUE 7 1330 - 1415		1ELA					[1/2]: 3PÅ MATNAT
TUE 8 1415 - 1455	ØKON	1ELA	1AAA			i i − K	[2/2]: 3PÅ MATNAT
VED 1	ENG	2AAB		1AAA	1MEA	i i − K)	[1/2]: 1HA YNO
VED 2 0855 - 0940	ENG	2AAB		1AAA	1MEA	Ē.	[2/2]: 1HA YNO
VED 3 0950 - 1035	ØKON		1AAA		2AA/		L 1/2 1: 2BU PSYK
WED 5 1150 1225	UKUN		1AAA				
WED 5 1150 - 1235 WED 6 1235 - 1320	KØ	1ELA	2444		1444		
VED 7 1330 - 1415	KØ	1ELA	2888		1888		
VED 8 1415 - 1455	1¥F011		2AAA			E an K ∕	
THU 1	NO		2AAA	1AAA	1HSA	₩ K	[172]: ZEK KUMM
THU 2 0855 - 0940	NO		2AAA	1AAA	1HSA	E ⊞ <mark>K)</mark>	[272]: 2EK KUMM
THU 3 0950 - 1035	1¥F011					₩ K	[172]: 2SA SIKK
THU 4 1035 - 1120	TVF-011	10.0.0			20.00		[2/2]: 2SA SIKK
THU 6 1235 - 1320	NAT	1444		3AAB	2440		
THU 7 1330 - 1415	A-time			or in the			
THU 8 1415 - 1455	A-time						
FBI 1	INFO		1AAA	3AAB			
FRI 2 0855 - 0940	INFO		1AAA	3AAB			
FRI 3 0950 - 1035	ENG			1AAA	3AAC		
FRI 4 1035 - 1120	ENG			1AAA	3AAC		
FBL 6 1235 - 1320	A-time NO		2000	1444			
FBI 7 1330 - 1415	NO	2AAA	2AAA	IAAA	3PÅ/ 🔻		
					•		
SELECT 1AA POA N	A NAT	CAT: 4	TUE 7				<u>ئ</u> ر

In the status bar (at the bottom of the screen) we see our selection 1AA NAT.

Category: 4 (i.e. pure class) and actual period: TUE 7. The colours in figure show:

Red: You can't interchange/ move an act. from 1AA in this period to TUE 7

Green: You are permitted to interchange/ move this activity in 1AA to TUE 7 (For other reasons you are not allowed move the subject A-time in this example.)

Yellow: You may interchange/move this period with TUE 7, but you will then break a day conflict.

In the figure above we are most interested in the green periods and these periods should also have POA available to be able to place 1AA NAT here. That is fulfilled for FRI 6 and we have found a solution:

Click on FRI 6 with left mouse and DRAG that to TUE 7 and DROP it here. Tplan reacts to this with this dialog:

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There is no problem here. We click OK and our selection is modified this way:

TP 1- Tplan - Bjertne	s vgs [041]	[Regist	tered vers	sion]					
Files Edit Format	s Functio	ons Co	ntrol R	un Mai	ntenance	Compre	ssed Help		
	- -	_ 							
		Ľ	EE		₩₩				
School Teachers 1	eacher noo	le Class	es Boor	s Subie	ete Block	ke Periode	Steering Compress	sed Selection	Full Tey 4 🕨
	, cacher poo		-				oteching		Tailton
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MON 3 0350 - 1035 MON 4 1035 - 1120	1VE021		2000		10.0.0	Visplay	erased activities		
MON 5 1150 - 1235	A-time		Grinn		Listers.	Display	parked activities		<u> PPP</u>
MON 6 1235 - 1320	ENG	1ELA	2AAA	1888		📃 📃 Display	selected activities		5 5 5
MON 7 1330 - 1415	1¥F011	2AAA		1HSA	3AAE				
MON 8 1415 - 1455	1¥F011	2AAA		1HSA	3AAE	Select	pos 🔻 🔚 🖪	F2 S	
TUE 1	1¥F023	1ELA	2AAA						
TUE 2 0855 - 0940	1¥F023	1ELA	2AAA			🗄 🔣 🔴	[1/1]: 1AA NAT		
TUE 3 0950 - 1035	2¥F031				1AAA		[1/1]: 1AB NAT		
TUE 4 1035 - 1120	2VF032		_			Ť.	[1/2]: 1AC NO		
TUE 5 1150 - 1235	NAT	1AAA		3AAB	1SAA		[1/2]. 1AC NO		
TUE 6 1235 - 1320	NAT	1AAA		3AAB	1SAA		[272]. IAC NU		
TUE 7 1330 - 1415	NO	1ELA		1888		♥ "Ľ ?.	[172]: 3PA MAT	NAT	
TUE 8 1415 - 1455	UKUN	IELA	IAAA			E E.	[2/2]: 3PA MAT	NAT	
VED 1	ENG	2AAB		1888	1MEA	Ė… K >	[1/2]: 1HA YNO		
VED 2 0855 - 0940	ENG	ZAAB	14.4.4	1888	IME/	Ė <mark>K</mark> >	[2/2]: 1HA YNO		
WED 4 1025 - 1120			1444		24444		[1/2]: 2BU PSY	ĸ	
WED 5 1150 - 1235	A-time		IAAA				[2/2]: 2811 PSY	ĸ	
VED 6 1235 - 1320	КØ	1ELA	2888		1888		[1/2] - 200 F 31		
VED 7 1330 - 1415	KØ	1ELA	2AAA		1888				
VED 8 1415 - 1455	1VF011		2AAA			Ľ.	[2/2]: 210 TNU		
THU 1	NO		2AAA	1888	1HSA	E ⊕ <mark>K</mark>)	[172]: 2EK KUM	M	
THU 2 0855 - 0940	NO		2AAA	1AAA	1HSA	E ⊕ • B	[2/2]: 2EK KOM	M	
THU 3 0950 - 1035	1¥F011						[1/2]: 2SA SIKK		
THU 4 1035 - 1120	1¥F011						[2/2]: 2SA SIKK		
THU 5 1150 - 1235	NAT	1AAA			2AA0				
THU 6 1235 - 1320	NAT	1AAA		3AAB	2AA0				
THU 7 1330 - 1415	A-time			-					
THU 8 1415 - 1455	A-time				_				
FRI 1	INFO		IAAA	3AAB					
FRI 2 0855 - 0940	INFO		TAAA	JAAB	28.84				
FRI 3 0950 - 1035	ENG			1444	3AAL				
FRI 5 1150 - 1235	0.time			IAAA	SAAL				
FBI 6 1235 - 1320			2444						
FBI 7 1330 - 1415	NO	2888	2888	1888	3PÅ/ 🔻				
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We have done our first drag/drop and moved an activity from FRI 6 to TUE 7. We call this a P2operation. Next we click on 1AA NAT in kickout list and DRAG that to FRI 6 where we DROP it. Tplan responds with this dialog:



No problem here. We click OK and KtempGrid is modified this way:

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<u>Files</u> Edit Form	m <u>a</u> ts F <u>u</u>	inctions	C <u>o</u> ntr	ol <u>R</u> un	<u>M</u> aint	enance	Compre	ssed <u>H</u> el	lp	
	8	e v	Þ		00	₽₽				
School Teachers	Teache	er pools	Classes	Rooms	Subject	s Block	s Periods	Steering	Compressed Selection	n Full Tex 🔹 🕨
Selection	1888	POA	TB	NB	PKG		Direlau	وربية المعربا مثران		R) R) R)
MON1	2VF033				1AAA	í	Vispiay	KICKED OUT	activities	
MON 2 0855 - 0940	2VF034				1AAA		📃 Display	not laid ac	tivities	
MON 3 0950 - 1035	1VF021		2AAA		1AAA		🔽 Display	erased act	ivities	XXX
MON 4 1035 - 1120	1VF021		2AAA		1AAA		Display	norked set	hijikaa	
MON 5 1150 - 1235 A-time Display parket addrvines Display parket addrvines										
MON 6 1235 - 1320 ENG IELA 2AAA IAAA DIAAA										
MON 7 1330 - 1415	1VF011	2AAA		1HSA	3AAB					
MON 8 1415 - 1455	1VF011	2AAA		1HSA	3AAB		Select	pos 🔻	🕂 F2 S	
TUE 1	1VF023	1ELA	2AAA							
TUE 2 0855 - 0940	1VF023	1ELA	2AAA				± <mark>K)</mark>	[171]:1	1AB NAT	
TUE 3 0950 - 1035	2VF031				1AAA		⊞ <mark>R</mark>)	1/21	IAC NO	
TUE 4 1035 - 1120	2VF032							12/21	IAC NO	
TUE 5 1150 - 1235	NAT	1AAA		3AAB	1SAA			[2/2].		
TUE 6 1235 - 1320	NAT	1AAA		3AAB	1SAA		E K	[172]: -	SPA MATNAT	
TUE 7 1330 - 1415	NO	1ELA		1AAA				[2/2]: 3	3PĂ MATNAT	
TUE 8 1415 - 1455	ØKON	1ELA	1AAA					[1/2]: 1	1HA YNO	
WED1	ENG	2AAB		1AAA	1MEA		the R	12/21		
WED 2 0855 - 0940	ENG	2AAB		1AAA	1MEA			11/21		
VED 3 0950 - 1035	ØKON		1AAA		2AAA			1 1/2 1.4		
VED 4 1035 - 1120	ØKON		1AAA				E − K	[2/2]: 4	ZBU PSYK	
VED 5 1150 - 1235	A-time						€ K	[1/2]: 3	2TØ YNO	
VED 6 1235 - 1320	КØ	1ELA	2AAA		1AAA			[2/2]: 2	2TØ YNO	
VED 7 1330 - 1415	КØ	1ELA	2AAA		1AAA			11/21:3	2EK КОМ <mark>М</mark>	
VED 8 1415 - 1455	1VF011		2AAA					12/21		
THU1	NO		2AAA	1AAA	1HSA			[2/2]. 4		
THU 2 0855 - 0940	NO		2AAA	1AAA	1HSA		E K	[172]: 2	ZSA SIKK	
THU 3 0950 - 1035	1VF011						K ▶	[2/2]: 3	2SA SIKK	
THU 4 1035 - 1120	1VF011		_							
THU 5 1150 - 1235	NAT	IAAA			2AAC					
THU 6 1235 - 1320	NAT	1AAA		3AAB	2AAC					
THU 7 1330 - 1415	A-time									
THU 8 1415 - 1455	A-time									
FBI1	INFO		1AAA	3AAB						
FRI 2 0855 - 0940	INFO		1AAA	3AAB						
FRI 3 0950 - 1035	ENG			1AAA	3AAC					
FRI 4 1035 - 1120	ENG			1AAA	3AAC					
FRI 5 1150 - 1235	A-time					-				
FRI 6 1235 - 1320	NAT	IAAA	2AAA							
FBI 7 1330 - 1415	NO	2AAA	2AAA	1AAA	3PAA					
FRI 8 1415 - 1455	NAT	IAAA	ZAAA		3PAA					
SELECT 1AA POA		NAT C	AT: 4 TU	JE 7						đ

We have performed our second drag/drop i.e. moved an activity from kickout list to compressed table. We call this a P1- operation. Notice that 1AA NAT has disappeared from kickout list

We have done our first very simple adjustment. It required some figures and comments to explain what is going on, but in real life this problem is solved after a few seconds. We will adjust a slightly more complicated in kickout list and select 3PÅ MATNAT which is a double period and containing several teachers. We start with P4 button just same way as previous example and get:



This time we select Small parallels as category since our current activity is also a small parallel. We get this KtempGrid:

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	QB	/ 🖻 C			₽₩							1]		s P
School Teachers Tea	acher pools	Classes	Rooms	Subjects	Blocks	Periods	Ste	eering	Com	pressed	d Selectio	n Fu	ll Text	Table	es Li	st 🔹 🕨
Selection 3	RPÂA	PKG	JG		GM	BKA		E D:								
MON 1	VF033	1888		1AAA		1888	<u> </u>	V Dis	splay H	kicked (out activit	ies				
MON 2 0855 - 0940	MATNAT	1888	3PÂA	1888	зра			📃 Dis	splay r	not laid	activities				?	??
MON 3 0950 - 1035 2	VF011	1AAA	2888	1AAA				🕡 Dis	enlau e	erased :	activities				×	XX
MON 4 1035 - 1120 2	2VF011	1AAA	2AAA	1AAA												
MON 5 1150 - 1235	A-time							DIS	spiay p	parked	activities					
MON 6 1235 - 1320 2	2¥F021							Dis	splay :	selected	activitie:	s			5	s s
MON 7 1330 - 1415 E	ENGHIS	3AAB	1AAA		1AAA	3PÂA								_		
MON 8 1415 - 1455 E	INGHIS	3AAB	1AAA		1AAA	3PÅA		Sele	et p	• 20Q		8 F	2 5			
TUE 1 2	VF014			1AAA		1BYA										
TUE 2 0855 - 0940 2	2VF014			1AAA		1BYA		⊞… <mark>K</mark>		[171]	: 1AB N	AT				
TUE 3 0950 - 1035		1AAA		1AAA		1AAA		÷K		1/2	1 AC N	0				
TUE 4 1035 - 1120				1AAA		1AAA			(I	1 2 2 2 1		0				
TUE 5 1150 - 1235	10	1SAA		3PÅA				±		[272]	. IAC N	U				
TUE 6 1235 - 1320	10	1SAA		3PÅA				. ⊡ R	201	1/2	: 3PA M	IA I N/	A.I.			
TUE 7 1330 - 1415	VO			3PÅA		3AAC				3P.	Ă MATN	IAT G	M 310) "Ma	tema	tikk"
TUE 8 1415 - 1455			1HSA							3P	Å MATN	IAT JI	G NA	"Natu	ırfaq"	
VED 1	10	1MEA	1HSA	3PÅA					5 1	12/21	- 3PÅ M	IAT N	NT.			•
VED 2 0855 - 0940	10	1MEA	1HSA	3PÅA					<u>. </u>	[1/2]						
¥ED 3 0950 - 1035	МАТМАТ	2AAA	3PÂA		3PÅA				5 I	[172]		NO				
VED 4 1035 - 1120	MATNAT		3PÅA		3PÅA			₩. <mark>K</mark>		[2/2]	: THA Y	NU				
VED 5 1150 - 1235	A-time							Ē <mark>K</mark>		[1/2]	: 2BU F	SYK				
VED 6 1235 - 1320	ENGHIS	1888	2888			3PÅA				[2/2]	: 2BU F	SYK				
VED 7 1330 - 1415 2	2VF024	1888				2AAA		H-R		1/2	2TØ Y	'NO				
VED 8 1415 - 1455 2	2VF024		1AAA		1888	2888				1 2/2	27.01 ¥	NO				
THU 1 2	2¥F021	1HSA			XXX				(I	1 1 1 2 1	. 210 1					
THU 2 0855 - 0940 2	2VF021	1HSA 👘			XXX			Щ <mark>К</mark>		[172]	: ZEK K	UMM				
THU 3 0950 - 1035 E	INGHIS		1AAA		IAAA	3PÅA		K)	[2/2]	: 2EK K	UMM				
<u>THU 4 1035 - 1120</u>	INGHIS		<u>1888</u>		IAAA	3PAA		K		[1/2]	: 2SA S	IKK				
THU 5 1150 - 1235	NO VO	2AAC		3PAA		2444				[2/2]	: 2SA S	IKK				
THU 6 1235 - 1320	10	ZAAC		3PAA		3AAC		_								
THU / 1330 - 1415	s-time															
THU 8 1415 - 1455	s-cime															
FRI1	10			3PAA		3AAC										
FRI 2 0855 - 0940	UV UV			3PAA		3AAC										
FRI 3 0950 - 1035	10	JAAC	IHSA	3PAA												
FRI 4 1035 - 1120		JAAC	IHSA			ZAAA										
FDL 0 100 - 1235	s-cime		2000													
FBI 7 1330 - 1415		3084	2000				-									
<		vi nn	- and a later			۱.										
SELECT 3PA GM 310	MATNA	I CAT: 5)													

The interesting periods are TUE 8 and FRI 4 where 3PÅ is available but teacher JG is occupied here. There are several ways of solving this problem and it would require many figures to show all stages in this adjustment. Instead I will give a verbal description of one way of doing it:

We notice that teacher AKO has many periods in subject NO in 3PÅ. He is also available in TUE 8 and FRI 4. There are reasons to believe that the period breakdown maybe modified for this subject.

One possibility is: Move 3PÅ NO from TUE 5 to FRI 4. Move 3PÅ NO from TUE 6 to TUE 8. We do these adjustments with two P2 – operations

JG and GM are both available in TUE 5-6. With two P1- operations we move 3PÅ MATNAT from kickout list to respectively TUE 5 and TUE 6.

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TP 1- Tplan - Bjertnes	s vgs [041]	[Register	ed versio	n]						1		- 🗆 🗙
<u>F</u> iles <u>E</u> dit Form <u>a</u> t	s F <u>u</u> nction	s C <u>o</u> nt	rol <u>R</u> un	Mainte	enance	Compre	ssed	<u>H</u> elp				
	QA	V P	10		•••			-		1		E S P
School Teachers T	eacher pools	Classes	Rooms	Subjects	Blocks	Periods	St	eering Corr	pressed Sele	ction Full	Text 1	Tables List
Selection	3PÅA	PKG	JG	АКО	GM	вка						
MON 1	2VF033	1AAA		1888		1AAA	_	💟 Display I	kicked out ac	stivities		
MON 2 0855 - 0940	MATNAT	1AAA	зраа	1888	3PÅA			📃 Display i	not laid activi	ties		????
MON 3 0950 - 1035	2¥F011	1AAA	2888	1888				🔽 Displau	erased activit	ies		XXX
MON 4 1035 - 1120	2¥F011	1AAA	2AAA	1AAA				Display	and and and in the			
MON 5 1150 - 1235	A-time							Display	рагкео астічн	les		
MON 6 1235 - 1320	2¥F021							Display	selected activ	vities		S) S) S)
MON 7 1330 - 1415	ENGHIS	3AAB	1AAA		1AAA	3PÅA						
MON 8 1415 - 1455	ENGHIS	3AAB	1AAA		1AAA	3PÅA		Select	pos 🔻 📒	- E2	2 5	
TUE 1	2¥F014			1AAA		1BYA						
TUE 2 0855 - 0940	2VF014			1AAA		1BYA		⊕ <mark>K)</mark>	[1/1]: 1A	B NAT		
TUE 3 0950 - 1035		1AAA		1AAA		1AAA		H-R)	[1/2]+ 1A	CND		
TUE 4 1035 - 1120				1AAA		1AAA			1 2/2 1- 14	CNO		
TUE 5 1150 - 1235	MATNAT	1SAA	3PÅA		3PÂA			⊞… K	[272]: 1A			
TUE 6 1235 - 1320	MATNAT	1SAA	3PÅA		3PÅA 👘			≣… <mark>K> ●</mark>	[172]: 1H	A YNU		
TUE 7 1330 - 1415	NO			3PÅA		3AAC		€⊷K	[2/2]: 1H	A YNO		
TUE 8 1415 - 1455	NO		1HSA	3PÅA					[1/2]: 2B	U PSYK		
VED 1	NO	1MEA	1HSA	3PÅA					1 2/2 1· 2B	IL PSYK		
¥ED 2 0855 - 0940	NO	1MEA	1HSA	3PÅA					[1 /2], 20			
¥ED 3 0950 - 1035	MATNAT	2AAA	3PÅA		3PÅA			± K	[1/2]: 21			
VED 4 1035 - 1120	MATNAT		3PÂA		3PÅA			€… <mark>K</mark> >	[272]: 21	ØYNU		
VED 5 1150 - 1235	A-time							€··· K	[1/2]: 2E	K KOMM		
VED 6 1235 - 1320	ENGHIS	1888	2AAA			3PÅA			[2/2]: 2E	к комм		
VED 7 1330 - 1415	2¥F024	1AAA				2AAA		ф <mark>К</mark>)	11/2 1-25	A SIKK		
VED 8 1415 - 1455	2¥F024		1AAA		1AAA	2AAA			1 2/2 1. 20	ACIKK		
THU 1	2¥F021	1HSA 👘			XXX			± F	[272]. 23	H JINN		
THU 2 0855 - 0940	2¥F021	1HSA			XXX							
THU 3 0950 - 1035	ENGHIS		1AAA		1AAA	3PÅA						
THU 4 1035 - 1120	ENGHIS		1AAA		1AAA	3PÅA						
THU 5 1150 - 1235	NO	2AAC		3PĂA		2AAA						
THU 6 1235 - 1320	NO	2AAC		3PĂA		3AAC						
THU 7 1330 - 1415	A-time						-					
THU 8 1415 - 1455	A-time											
FRI 1	NÓ			3PÅA		3AAC						
FRI 2 0855 - 0940	NÓ			3PÄA		3AAC						
FRI 3 0950 - 1035	NÖ	3AAC	1HSA	3PÄA		2444						
FRI 4 1035 - 1120	NO	3AAC	1HSA	3PĂA		2444						
FRI 5 1150 - 1235	A-time											
FRI 6 1235 - 1320	27/F011	008-	ZAAA				-					
FRI 7 1330 - 1415	JKM	3PAA	ZAAA				Ŧ					
						• •						
SELECT 3PÅ GM 31	0 MATNAT	CAT: 5										

The end result of these 4 drag/drop operations is shown in this figure:

This proved to be a fairly simple adjustment. The main point of this exercise was to show the simplicity and flexibility of managing multiple periods when you use a single period as basis for drag/drop- operations.

6.2 THE BASIC DRAG/DROP- AND SUPPLEMENTARY- OPERATORS

In earlier versions of Tplan each operator had specific buttons leading to dialogs for giving further information. We have the same functionality today, but drag/drop makes many buttons and dialogs unnecessary and things are now handled in a much simpler and faster way

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6.2.1 P4: Selection/Colouring (Advanced Selection)

This operator is still used in much the same way as in earlier versions. There is one P4 button for the kickout list. If you want to make a selection from an activity in compressed table, there is also a P4 – button in main bar.

This operator does not modify the timetables itself, but in many ways this is **the most important operator** since it performs these two tasks:

- It creates the selection of class/teacher/room tables in such a manner that you see various possibilities for assigning the next problematic activity.
- The positions in the tables are coloured according to certain rules, and these colours tell a lot about which position to select for the next assignment.P4 is called in a number of different contexts, and we might define our selection criteria in a nuanced way. The most usual way of using P4 will be to select some activity in KomprGrid, KtempGrid or UtsGrid and next clicking P4 button

The next figure shows a section of a complete compressed table:

TP 1- Tplar	n - SAUDA UN	IGDOMSSKOLI	E [914] [Regi:	stered version]				• X
<u>F</u> iles <u>E</u> di	t Form <u>a</u> ts	F <u>u</u> nctions C	<u>o</u> ntrol <u>R</u> un	<u>M</u> aintenance	Com <u>p</u> resse	d <u>H</u> elp		
	1 🖻 🔒 🤇) ti di 🗠					
School T	eachers Teac	her pools Clas	ses Rooms	Subjects Block	ks Periods S	teering Compr	essed Table	Full Te 🔨 🕨
Table	8C	9A	9B	9C	10A	108	10C	RØD
MON 1	MA	КИН	NAEN 3	§ HKNM 4	KRØ	KRØ	NOMA 1	
MON 2	BIO	КИН	EN	§ HKNM 4	NO 1	NO	¥ NOMA 2	9B
MON 3	SAF	NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV	
MON 4	NO	NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV	
MON 5	KRØ1	SAF	SAF	SAF	# TV 1	# TV 1	# TV 1	
MON 6	MUS	KRL	KRL	KRL	# TV 1	# TV 1	# TV 1	
TUE 1	TV 1	§ HKNM 1	SAF	¥ NOMA 1	NAT	¥ ENNA 1	EN	10B ¥
TUE 2	KRL	§ HKNM 1	КИН	¥ NOMA 2	NO 1	¥ ENNA 2	X NOMA 3	10B ¤
TUE 3	SAF	§ HKNM 3	КИН	MUS	KRL	SAF	NAT	
TUE 4	¥ NOMA 3	BIO	§ HKNM 1	КИН	NOMA 5	¥ NOMA 2	SAF	
TUE 5	X NOMA 4	BIO	§ HKNM 1	КИН	SAF 3	X NOMA 1	X NOMA 4	
TUE 6	EN	MUS	§ HKNM 3	BIO	# TV 1	# TV 1	# TV 1	
WED 1	× NOMA 1	§ HKNM 6	SAF	SAF	¥ ENNA 2	КОН	MA	
WED 2	EN	S HKNM 4	EN	BIO	[#] ENNA 1	КОН	NO	9B
WED 3	BIO	§ HKNM 4	NAEN 3	NAEN 3	¥ NOMA 1	NO	КОН	
WED 4	¥ NOMA 2	⁸ NAEN 1	KRØ	§ HKNM 1	KRØ	KRØ	КОН	
WED 5	КИН	X NAEN 2	KRØ	§ HKNM 1	KRØ	KRØ	SAF	
WED 6	КИН	SAF	MUS	§ HKNM 3	¥ NOMA 2	MA	KRØ	
THU 1	SAF	X NOMA 1	¥ NOMA 1	¥ NAEN 2	кон	MA	NAT	B*
THU 2	MA	X NOMA 2	NOMA 2	^R NAEN 1	КОН	SAF	MUS	B*
THU 3	× ENNA 1	# SKEV	# SKEV	# SKEV	NOMA 5	NO	NO	B≖
THU 4	# ENNA 2	# SKEV	# SKEV	# SKEV	ENNA 3	EN	SAF	10B
THU 5	NO	# TV 1	# TV 1	# TV 1	NO 1	KBL	KBL	
THU 6	KBL	# TV 1	# TV 1	# TV 1	SAF 1	NAT	EN	
FBI 1	SAF	# TV 1	# TV 1	# TV 1	¥ NOMA 3	EN	KRØ	10B
FBI 2	KLB	SAF	X NAEN 1	NO	× NOMA 4	× NOMA 3	KRØ	9B 🕱
FRI 3	KRØ	NAEN 3	× NAEN 2	SAF	MUS	SAF	MA	9B ¤
FBI 4	KRØ	NOMA 4	§ HKNM 6	NOMA 3	ENNA 3	MUS	NO	
FRI 5	NO	KRØ	§ HKNM 4	KRØ	SAF 1	× NOMA 4	¥ ENNA 1	
FRI 6	TV 1	KRØ	§ HKNM 4	KRØ	NAT	NAT	¥ ENNA 2	
4								
MAIN PRO	GRAM COMP	LETED ITER	ATIVE					

Figure 6.1

For some reason we want to move 9B KRØ (i.e. PE) in WED 4 somewhere else. We click on that cell and then P4 in Main Bar. We enter the P4 –dialog as shown before. This dialog consists of 4 different parts, and we show here each part in a separate figure:

SELECTION OF ACTIVITIES.

This is the upper left corner, and this is of course the most important element in the dialog. Usually this defines one specific activity, but this selector is defined just as for period directives, and in the general case we might refer to any activity set. Actual position.

Class	Teacher	Boom	Activitu	
9P	SAN	SV/AH	КВИ	
30	JAN	JVDH	NIND	

Upper right corner.

This is usually the position where we selected an activity, but these fields might also be blanks i.e. in the case we have selected some activity in UtsGrid. The selected tables we produce will contain colour codes and the interpretation of these is very different depending on whether actual position is empty or filled in.

In the current case we have selected 9B in position WED 4 and the dialog above is automatically filled in. A drop down list allows you to modify selected period. The interpretation of the colour codes in the two cases are:

Actual position Day WED	
Pos 4	
Select position	•

Empty actual position.

The colour codes are now telling something of the assignment possibilities for the selector i.e. usually one specific activity. Interpretation of colour codes is then

- **Dark green background black foreground.** Tplan sees no problems with using this position for selected activity.
- Light green background black foreground. Tplan knows that this position is available for selected activity, but due to various timetabling conditions these positions must be used for other activities
- **Deep red background white foreground.** One of the resources of the activity is assigned here, and accordingly the activity is blocked here.
- Light yellow background black foreground. The activity might be assigned here, but you are then breaking a day conflict i.e. the activity is already assigned on this day.
- **Pink background black foreground.** The activity may be assigned here, but you are then ignoring some blockings in period directives.
- **Dark yellow background black foreground.** The classes and teachers may be assigned here but there is some room requirement which is not satisfied.
- **Dark red background black foreground.** Assignment is possible but you are then breaking a day conflict and some positional directive.
- Yellow brown background black foreground. Assignment here breaks both a day conflict and some room requirement.
- Olive background black foreground. Assignment here breaks both some positional directive and some room requirement

Filled in Actual position.

Now the colour codes tell something about the assignment/interchange possibilities of other activities in relation to actual position. The selected activity is possibly already assigned here. If not, we **imagine it being assigned here**, and then we make an interchange of actual position with all other positions in the table. Actual position will very often be an empty cell, and then the interchange process is reduced to move other activities to actual position.

The interpretation of the colour codes is now:

- Light green background black foreground. This position may be interchanged with or moved to actual position.
- Light yellow background black foreground. This position may be interchanged with or moved to actual position, but we then break one or more day conflicts.
- **Pink background black foreground.** This position may be interchanged with or moved to actual position, but we are then ignoring one or more blockings in positional directives.
- **Deep red background white foreground.** This position **cannot** be interchanged with or moved to actual position. Regrettably the most common colour.
- **Dark red background black foreground.** This position may be interchanged with or moved to actual position, but you are then breaking both day conflicts and initial blockings.
- Dark lilac background black foreground.

This position may be moved to actual position, but the selected activity **cannot** be moved back to this position.

Both colour techniques are very important in various contexts, and it is important to recognize the different interpretations of colour codes in the two cases.

3. Category.

This element is the bottom right part of the dialog, and defines the kind of selection we are requiring. We have these possibilities:

1. Only activity.

We create a selection of **timetable columns** consisting only of the resources (classes, teachers, rooms) being included in selected activity. When working **with large blocks in the initial timetabling stages, this is the only natural choice.** Later in the timetabling process when assigning pure class activities, this choice gives you too few columns to get a proper survey of natural moves/interchanges, and we then prefer one of the other categories. This is the only selection which is completely dependent upon selected activity while the other categories depend only upon which class or teacher you select.

Category
All activities
Only activity
Pure class activities
🔘 Small parallels

2. All activities.

We now get a selection for all resources having common activities with selected class (teacher).For most classes this becomes too many resources to get a proper survey. For primary schools with a small number of teachers' pr. class this is a natural survey and is otherwise seldom used.

3. Pure class activities.

We create a selection consisting of selected class and the teachers having pure class activities in the class (i.e. only one teacher alone in the class). These are the teachers which most likely may be moved or interchanged. Visually you now should have a good survey to assign activities for the class in question. This is very often the most usual category (in particular when working with components).

4. Small parallels.

Now you get a selection of actual class and classes/teachers connected with the class in simple activities or small parallels i.e. activities consisting maximally of 4 resources. This category usually contains more teachers than the previous category. Still there should be fair chances for moving around the teachers you see onscreen. Teachers only included in larger block for the class (at least 5 resources) have few possibilities for being moved around. They are not included in the selection since they only create confusion in a survey which ought to be as compact as possible.

My strong recommendation is to use the category: Only activity while working with large blocks. As soon as possible we switch to Small parallels. If this selection is too large or if there only is pure class activities remaining, I switch to that latter category.

4. Resources being unconditionally included in selection.

Down left in the dialog there are three	<u>Classes</u> <u>T</u> eachers <u>R</u> ooms	
tab sheets where we can define which	01 KANT	Include in coloction
classes, teachers or rooms which is		
included in the selection regardless of	04 FYSR	
which category you select. More	05 MUSR	Noom groups
seldom used facility but in some	06 FURM	
cases a very important facility. The	08 TEGN	
most typical example is the	09 HOBR	Select <u>a</u> ll
following:	11 V GYM2	
We have assigned all large blocks	□ 12	🔩 Select n <u>o</u> ne
and start assigning smaller activities	13 VOH	
which requires heavily used specialist	15	
rooms (P. E or Crafts might be a	17	
typical example).		

In this case it is very useful to get a survey of the gymnastic rooms and craft rooms regardless of selected category to investigate possibilities for moves/interchanges in these rooms. Another example for using this technique is if several classes are cross linked in a multitude of ways and having a dominant influence upon the whole timetable and ought to be watched at all times. Same is the case if teachers are teaching in several heavily used specialist rooms (example: P.E., Cooking and Crafts). Watch those combined teachers.

This part of the dialog has been given some useful extensions:

• You might require set of room groups to be included in a selection unconditionally

• Even if you are not working with Teacher Pools you could fill in this table to be able to refer to set of teachers being problematic when adjusting your kickouts.

By clicking OK in the P4 – dialog filled out as shown above, we get the following colour selection (KtempGrid):

ፑ 1- Tplan -	SAUDA UNG	omssk	OLE [914]	[Regis	stered ver	sion]						
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts F <u>u</u>	nctions	C <u>o</u> ntrol	<u>R</u> un	<u>M</u> ainten	ance Co	mpressed	l <u>H</u> elp				
School Tear	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering											
Selection	9B	ISA	SAN	SAN	GYM1	GYM2	IGYM3	ISVØH				
MON 1	NAEN 3	9B	10C ×			LØV	LIE					
MON 2	EN		10C ¤									
MON 3	NOMA 5	9B			NØR	# JOH		SOL				
MON 4	NOMA 3	9A			NØR	# JOH		SOL				
MON 5	SAF	9B			LØV	JOH	SOL	LIE				
MON 6	KRL	9B			LØV		SOL					
TUE 1	SAF	9B			B⁼	B⁼	B⁼	B≖				
TUE 2	КИН		10C ¥		B×	B*	B*	B*				
TUE 3	КИН				B≖	B⁼	B*	B≖				
TUE 4	§ HKNM 1	9B §			B⁼	B⁼	B⁼	B≖				
TUE 5	§ HKNM 1	9B §	10C ¤		B⁼	B⁼	B⁼	B≖				
TUE 6	§ HKNM 3	98 §			B*	B⁼	B⁼	B≖				
WED 1	SAF	9B	10C		B⁼	B*	B*	B≖				
WED 2	EN				B×	B⁼	B*	B≖				
WED 3	NAEN 3	9B			B×	B⁼	B*	B≖				
WED 4	KRØ	9B	9B		ISA	LØV	LIE	SAN				
WED 5	KRØ	9B	9B		ISA	LØV	LIE	SAN				
WED 6	MUS		10C		NØR	SAN						
THU 1	¥ NOMA 1	9A X	B≖		B×	B⁼	B×	B≖				
THU 2	¥ NOMA 2	9A ¤	B≖		B×	B⁼	B⁼	B≖				
THU 3	# SKEV	9A #	9A #	B*	B⁼	B≖	B⁼	B≖				
THU 4	# SKEV	9A #	9A #	B⁼	B⁼	B⁼	B≖	B≖				
THU 5	# TV 1		B*		B⁼	B⁼	B≖	B≖				
THU 6	# TV 1		B*		B⁼	B⁼	B≭	B*				
FRI 1	#TV 1		10C		NØR	SAN						
FRI 2	[#] NAEN 1	98 ¤	10C		NØR	SAN						
FRI 3	Ø NAEN 2		10C		SOL	JOH	LIE	NØR				
FRI 4	§ HKNM 6	9B §			LØV	JOH	LIE	SOL				
FRI 5	§ HKNM 4	9C	9C		ISA	SAN	JOH	NØR				
FRI 6	§ HKNM 4	9C	9C		ISA	SAN	JOH	NØR				
SELECT 9B	SAN SVØH K	RØ C	AT: 3 WE) 4								

Notice in this screen the following:

- All our PE- rooms (GYM1 etc.) are included in the selection unconditionally.
- All specials symbols (B* etc.) are included in the selection.
- Most periods in table are red i.e. impossible to use for an interchange. WED 2 seems to be acceptable and MON 3 may possibly be used by making other compromises.
- By checking further you see that the use of WED 2 is a complete illusion since all PE- rooms are blocked here. The correct interpretation of the green colour here is: You may interchange these two periods if you only consider classes and teachers but not rooms. In some cases (not here) this could be an acceptable compromise. By checking MON 3 further you find the situation here is even worse since an interchange destroys presassignment of large blocks.
• This is more or less a ridiculous example showing it is almost hopeless to move 9B KRØ from WED 2. The point of this exercise was to show how to create a selection, to show that the colour must be red with some reservation and to STRESS the fact the ALMOST all adjustment of kickouts should be handled in KtempGrid

6.2.2 P2: Move/Interchange an activity (table unit)

(Earlier button for P2- operation, currently not in Tplan but might later be restored)

P2 is a VERTICAL drag/drop- operation WITHIN a timetable grid. We drag an activity from period A and drop it in period B. Such a drag/drop may perform two different operations:

- MOVEMENT from A to B: An activity is dragged from A and dropped in B. In case this result in conflicts, there is a further choice to be made. We may EITHER accept these conflicts OR we may transfer conflicting activities to the kickout list.
- INTERCHANGE A with B: An activity is dragged from A and dropped in B. All conflicting activities are then moved from B and dropped in A. That might lead to a further choice from the user: We may EITHER accept new conflicts in period A OR we may transfer conflicting activities to the kickout list.
- To sum this up: A vertical drag/drop in a class/teacher-column (NB not rooms) may perform two different actions: MOVEMENT or INTERCHANGE. In each case there is a choice to be made about accepting new conflicts. Depending on the user's action a P2- operation might give 4 different results.

We will show P2 in the table fig 6.1. Assume that we for some reason want to move/interchange 9A MUS in TUE 6 (i.e. period A) with MON 6 (i.e. period B). We give no timetabling reasons for that action. We just want to show the mechanics (i.e. what could happen). We do this drag/drop and the following dialog pops up:



The heading shows what we are trying to do, followed with what would happen. This is the case where we move 9A MUS fro TUE 6 to MON 6 and then transfers conflicting activities to the kickout list. Assume we accept that and we end up with this result:

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TP 1- Tpla	an - SAUDA I	UNGDOMSS	KOLE [914]] [Registered version]
<u>F</u> iles <u>E</u> d	lit Form <u>a</u> ts	F <u>u</u> nctions	C <u>o</u> ntrol	<u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp
) <mark>6</mark> .) P (†	
School 1	Teachers Te	eacher pools	Classes Ro	Rooms Subjects Blocks Periods Steering Compressed 🔹 🕨
Table	8C	9A	9B	Display kicked out activities
MON 1	MA	КИН	NAEN 3	Display not laid activities
MON 2	BIO	КИН	EN	
<u>MON 3</u>	SAF	NAEN 3	NOMA 5	Display erased activities
MON 4	NO	NOMA 3	NOMA 3	Display parked activities
MON 5	KRØ1	SAF	SAF	Display special activities
MUN 6		MUS	KHL	
TUE 1	TV 1	<u>§ HKNM 1</u>	SAF	
TUE 2	KRL	<u>§ HKNM 1</u>	КИН	
TUE 3	SAF	§ HKNM 3	КИН	
	8 NUMA 3	BIO	S HKNM 1	
	8 NUMA 4	BIO	S HKNM T	
	EN		SHKNM 3	
WED 1	8 NUMA 1	SHKNM 5	SAF	
WED 2	EN	S HKNM 4		
WED 3	BIU X NOMA 2	SHKNM 4 8 MAEM 1	INAEN 3	
		8 NAEN 1		
WED D	KUH	SAF	MUS	
	CAE	8 NOMA 4	NOMA 1	
	MA	S NOMA 1	8 NOMA 1	
TUI 2	N ENNA 1	# CKEN	# CKEV	*
•			۲	
ОК				

9A MUS has been **MOVED** from TUE 6 to MON 6 and the two conflicting activities in MON 6 are transferred to the Kickout List.

Assume we would accept these 2conflicts. We get this message:



We accept this and get the following table:

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🏆 1- Tpl	an - SAUDA I	UNGDOMSSI	KOLE [914]	[Registered v	version]	-			-			×
<u>F</u> iles <u>E</u> o	dit Form <u>a</u> ts	F <u>u</u> nctions	C <u>o</u> ntrol	<u>R</u> un <u>M</u> aint	enance Co	mpressed	<u>H</u> elp					
	- 				a a fa				n 🔹			ari
	<u>ے ک</u>					تعالفالفا		لعالك				믜백
School	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Table Full Text Tables Listir 💶 📐											
Table	Table 8C 9A 9B 9C 10A 10B 10C <mark>R+D AUS BIR BRE </mark> 🔺											
MON 1	MA	КИН	NAEN 3	§ HKNM 4	KR+	KB+	× NOMA 1		8B	10C ×		
MON 2	BIO	КИН	EN	§ HKNM 4	NO 1	NO	× NOMA 2	9B	8B ¤	10C ×		
MON 3	SAF	NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV		8B 🕱 👘			
MON 4	NO	NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV					
MON 5	KB+1	SAF	SAF	SAF	#TV 1	#TV 1	# TV 1		10A #	9B		
MON 6	MUS	*DPL	KRL	KRL	#TV 1	#TV 1	#TV 1		10A #	9B	*DPL	
TUE 1	TV 1	§ HKNM 1	SAF	× NOMA 1	NAT	× ENNA 1	EN	108 ×	10C	9B		
TUE 2	KRL	§ HKNM 1	KUH	× NOMA 2	NO 1	× ENNA 2	× NOMA 3	108 ×		10C 🖄		
TUE 3	SAF	§ HKNM 3	KUH	MUS	KRL	SAF	NAT			10B	90	
TUE 4	× NOMA 3	BIO	§ HKNM 1	KUH	NOMA 5	× NOMA 2	SAF		8B	100		
<u>TUE 5</u>	× NOMA 4	BIO	§ HKNM 1	КИН	SAF 3	× NOMA 1	× NOMA 4		8B	10C 🗵		
TUE 6	EN		§ HKNM 3	BIO	#TV 1	#TV 1	#TV 1		10A #	8A		
WED 1	× NOMA 1	§ HKNM 6	SAF	SAF	🛛 ENNA 2	КОН	MA		10A 🖄	9B		
<u>WED 2</u>	EN	§ HKNM 4	EN	BIO	× ENNA 1	КОН	NO	9B	10A 🛛	100		
<u>WED 3</u>	BIO	§ HKNM 4	NAEN 3	NAEN 3	× NOMA 1	NO	КОН					
WED 4	× NOMA 2	NAEN 1	KR+	§ HKNM 1	KR+	KR+	КОН				8B	
WED 5	КОН	NAEN 2	KR+	§ HKNM 1	KR+	KR+	SAF		8B	10C		
WED 6	WED 6 KUH SAF MUS SHKNM 3 PINOMA 2 MA KR+ 88 98 -											
•	1										Þ	
OK												
		_										- 11

Notice here the symbol *DBL in MON 6 for both 9A teacher BRE. That notation conventionally means that there is a double assignment in this cell. By clicking F5 we can "blow up" the table and get the complete picture as shown in next table:

R	1- Tpl	an - SAUDA I	UNGDOMSS	KOLE [9	14] [Registe	ered version]							-		x
Eile	es <u>E</u> o	dit Form <u>a</u> ts	F <u>u</u> nctions	C <u>o</u> nt	rol <u>R</u> un <u>N</u>	<u>Maintenance</u>	Compress	ed <u>H</u> elp							
Sc	hool	Teachers Te	eacher pools	Classes	Rooms Su	ibjects Block	.s Periods	Steering Cor	npressed Table	Full Te	ext Tabl	es Listin	igs Var	ious	
Ta	ble	8C	9A	9A	9B	9C	10A	10B	10C	R+D	AUS	BIR	BRE	BRE	
MC)N 1	MA	КИН		NAEN 3	§ HKNM 4	KR+	KR+	× NOMA 1		8B	10C 🛛			Iml
MC)N 2	BIO	КИН		EN	§ HKNM 4	NO 1	NO	× NOMA 2	9B	88 ¤	10C 🗵			
MC)N 3	SAF	NAEN 3		NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV		88 ×				
MC)N 4	NO	NOMA 3		NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV						
MC)N 5	KB+1	SAF		SAF	SAF	#TV 1	# TV 1	#TV 1		10A #	9B			
MC	N 6	MUS	KRL	MUS	KRL	KRL	#TV 1	#TV 1	#TV 1		10A #	9B	8C	9A -	
TU	E 1	TV 1	§ HKNM 1		SAF	× NOMA 1	NAT	× ENNA 1	EN	108 ×	10C	9B			
TU	E 2	KRL	§ HKNM 1		KUH	× NOMA 2	NO 1	× ENNA 2	× NOMA 3	10B 🗵		10C 🛎			
TU	E 3	SAF	§ HKNM 3		KUH	MUS	KRL	SAF	NAT			10B	9C		
TU	E 4	× NOMA 3	BIO		§ HKNM 1	KUH	NOMA 5	× NOMA 2	SAF		8B	10C			
TU	E 5	× NOMA 4	BIO		§ HKNM 1	KUH	SAF 3	× NOMA 1	× NOMA 4		8B	10C 🗵			
TU	E 6	EN			§ HKNM 3	BIO	#TV 1	# TV 1	#TV 1		10A #	8A			
WE	WED 1 № HKNM 6 SAF № ENNA 2 KOH MA 104.8 9B Image: Compare the second sec														
•	<														
Har				_						_			_		
OK															

The reason for doing this in two steps is two folded: The first table is most compressed and perhaps enough. The second table is more complete but the blowing up process may take a little time.

Alternatively we might want to interchange 9A MUS in TUE 6 with 9A KRL and get the following warnings:

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Notice that these conflicts are in TUE 6 (i.e. in the period we started the drag i.e. period A). By accepting this we get this: table:

TP 1- Tpl	an - SAUDA	UNGDOMSS	KOLE [914]	[Registered v	version]						_ 0	×	
<u>F</u> iles <u>E</u>	dit Form <u>a</u> ts	s F <u>u</u> nctions	C <u>o</u> ntrol	<u>R</u> un <u>M</u> aint	enance Co	mpressed	<u>H</u> elp						
	D 🕒 🖯) P (2)		₽₽₽				1			SF	1
School	Teachers Te	eacher pools	Classes Ro	oms Subjects	s Blocks P	eriods Steeri	ing Compres	sed Table	Full Te	kt Tables	Listin	gs 🔳	•
Table	8C	9A	9B	9C	10A	10B	10C	R+D	AUS	BIR	BRE	BRU	
MON 1	MA	КИН	NAEN 3	§ HKNM 4	KR+	KR+	× NOMA 1		8B	10C ¤			
MON 2	BIO	КИН	EN	§ HKNM 4	NO 1	NO	× NOMA 2	9B	8B ×	10C ×			
<u>MON 3</u>	SAF	NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV		8B 😫 👘			9C §	
MON 4	NO	NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV						
MON 5	KR+1	SAF	SAF	SAF	#TV 1	# TV 1	#TV 1		10A #	9B			
MON 6		MUS	KRL	KRL	#TV 1	# TV 1	# TV 1		10A #	9B	9A -		
TUE 1	TV 1	§ HKNM 1	SAF	× NOMA 1	NAT	RENNA 1	EN	108 ×	10C	9B		9C 🛛	
TUE 2	KRL	§ HKNM 1	KUH	× NOMA 2	NO 1	× ENNA 2	× NOMA 3	108 ×		10C 🛛 👘		9C 🛛	
TUE 3	SAF	§ HKNM 3	КИН	MUS	KRL	SAF	NAT			10B	90		
TUE 4	× NOMA 3	BIO	§ HKNM 1	КИН	NOMA 5	× NOMA 2	SAF		8B	10C			
TUE 5	× NOMA 4	BIO	§ HKNM 1	КИН	SAF 3	× NOMA 1	× NOMA 4		8B	10C 🗵			
TUE 6	*DPL	KRL	§ HKNM 3	BIO	#TV 1	# TV 1	# TV 1		10A #	8A	8C	9C	
WED 1	× NOMA 1	§ HKNM 6	SAF	SAF	× ENNA 2	КОН	MA		104 ×	9B			-
•												•	
											_	_	
OK													

The steps here are: 9A MUS is moved to MON 6 and 9A KRL and other conflicting activities are moved back to TUE 6. By blowing up this table (F5) we get:

ፑ 1- Тр	📱 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]												
<u>F</u> iles <u>E</u>	dit Form <u>a</u>	ts F <u>u</u> nc	tions C <u>o</u> ntr	ol <u>R</u> un <u>N</u>	<u>Maintenance</u>	Compress	ed <u>H</u> elp						
School	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Table Full Text Tables Listings Various												
Table	Table 8C 8C 9A 9B 9C 10A 10B 10C <mark>R+D AUS BIR BRE </mark> E .												
MON 1	MA		KUH	NAEN 3	§ HKNM 4	KR+	KR+	× NOMA 1		8B	10C ×		
MON 2	BIO		KUH	EN	§ HKNM 4	NO 1	NO	× NOMA 2	9B	88 ¤	10C ×		
MON 3	SAF		NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV		88 ×			
MON 4	NO		NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV					
MON 5	KB+1		SAF	SAF	SAF	#TV 1	#TV 1	#TV 1		10A #	9B		
MON 6			MUS	KRL	KRL	#TV 1	#TV 1	#TV 1		10A #	9B	9A	
TUE 1	TV 1		§ HKNM 1	SAF	× NOMA 1	NAT	RENNA 1	EN	10B 🗵	10C	9B		
TUE 2	KRL		§ HKNM 1	КИН	× NOMA 2	NO 1	× ENNA 2	× NOMA 3	10B 🗵		10C 🛎		9
TUE 3	SAF		§ HKNM 3	KUH	MUS	KRL	SAF	NAT			10B	90	
TUE 4	× NOMA 3		BIO	§ HKNM 1	КИН	NOMA 5	× NOMA 2	SAF		8B	10C		
TUE 5	× NOMA 4		BIO	§ HKNM 1	КИН	SAF 3	× NOMA 1	× NOMA 4		8B	10C 🗵		
TUE 6	EN	MUS	KRL	§ HKNM 3	BIO	# TV 1	# TV 1	# TV 1		10A #	8A	8C	5
WED 1	× NOMA 1		§ HKNM 6	SAF	SAF	× ENNA 2	КОН	MA		10A 🖄	9B		-
•	•												
ОК													

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In the above we used TUE 6 as period A and interchanged with MON 6 = period B and accepted double assignments. Doing it the opposite way gives you something different. Assume you want to interchange 9A KRL in MON 6 (= period A) with TUE 6 (= period B) you get this message:

The Move or interchange activities							
activity 9A KRL from MONDAY 6 to	TUESDAY 6						
~What do you want to do?	How to handle conflicts?						
Move marked activity from A to B	Send conflicts to kick out folder						
Interchange activities in A and B	Accept double placements						
exchange activities 9A KRL from MONDAY 6 to TUESDAY 6 - accept double bookings: activity will give double booking: MUS BRE MUSR [8C MUS]							
activity will give double booking: KRL KLU 04 [9B KRL] activity will give double booking: KRL ISA 03 [9B KRL] activity will give double booking: KRL BIR 24 [9B KRL] activity will give double booking: KRL BIR 24 [9B KRL]							
The operation can be done with the above mentioned	conflicts.						
< III	H. A						

If we accept the above, we get this table:

TP 1- T	plan - SAUDA	UNGDOMSS	KOLE [914]	[Registered	version]	-		200		-	l	_ 6	1 - 2	x
<u>F</u> iles	Files Edit Formats Functions Control Run Maintenance Compressed Help													
) 🗅 🕒 🔒) 🔍 🖹 🗸	' 🖻 🖆 🛛		₽₽₽				<u>r</u> 1			S P		
School	Teachers T	eacher pools	Classes Ro	oms Subject	s Blocks F	Periods Steer	ring Compres	sed Table	Full Te	xt Table	s Listin	gs Vari	ous	
Table	8C	9A	9B	90	10A	10B	10C	R+D	AUS	BIR	BRE	BRU	BRY	
MON 1	MA	КИН	NAEN 3	§ HKNM 4	KR+	KR+	× NOMA 1		8B	10C ×				
MON 2	BIO	КИН	EN	§ HKNM 4	NO 1	NO	× NOMA 2	9B	88 ×	10C ×			10A	
MON 3	SAF	NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	# SKEV		88 ×			9C §	9B	
MON 4	NO	NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	# SKEV						9A	
MON 5	KR+1	SAF	SAF	SAF	#TV 1	# TV 1	#TV 1		10A #	9B			9C	
<u>MON 6</u>	MUS	MUS	*DPL	KRL	#TV 1	# TV 1	#TV 1		10A #	9B	*DPL		*DPL	
TUE 1	TV 1	§ HKNM 1	SAF	NOMA 1	NAT	RENNA 1	EN	108 ×	10C	9B		9C ×	8A	
TUE 2	KRL	§ HKNM 1	KUH	NOMA 2	NO 1	RENNA 2	NOMA 3	108 ¤		10C 🗵		9C 🛛	10A	
TUE 3	SAF	§ HKNM 3	КИН	MUS	KRL	SAF	NAT			10B	90			
TUE 4	× NOMA 3	BIO	§ HKNM 1	КИН	NOMA 5	× NOMA 2	SAF		8B	10C			98 §	
TUE 5	× NOMA 4	BIO	§ HKNM 1	КИН	SAF 3	× NOMA 1	NOMA 4		8B	10C ×			98 §	
TUE 6	EN	KRL		BIO	#TV 1	# TV 1	# TV 1		10A #	84		9C		Ŧ
•													P.	
ОК														t

This is very different from the previous table. The lesson here is: If you want to want to interchange something in period A with something in period B, it is some cases important what you call period A (I.e. where we start the drag)

The last possibility when dragging 9A MUS from TUE 6 to MON 6, gives you this message:

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In this case you want to interchange TUE 6 with MON 6, and sending conflicting activities to the Kickout list this table is the result:

TP 1- Tp	olan - SAUDA		KOLE [914]	[Registered	version]	-	
<u>F</u> iles	Edit Form <u>a</u>	ts F <u>u</u> nctions	s C <u>o</u> ntrol	<u>R</u> un <u>M</u> ain	tenance C	ompressed	<u>H</u> elp
			n e t		₽₽₽		
School	Teachers 1	Teacher pools	Classes R	ooms Subject	s Blocks I	Periods Steer	ing Compressed Table Full Text Tables Listings Various
Table	8C	9A	9B	9C	10A	10B	Display kicked out activities
MON 1	MA	КИН	NAEN 3	§ HKNM 4	KR+	KR+	Display not laid activities
MON 2	BIO	КИН	EN	§ HKNM 4	NO 1	NO	Display rockaid activities
MON 3	SAF	NAEN 3	NOMA 5	§ HKNM 6	# SKEV	# SKEV	
MON 4	NO	NOMA 3	NOMA 3	NAEN 3	# SKEV	# SKEV	Display parked activities
MON 5	KR+1	SAF	SAF	SAF	#TV 1	#TV 1	Display selected activities SSS
MON 6		MUS	KRL	KRL	#TV 1	#TV 1	
TUE 1	TV 1	§ HKNM 1	SAF	× NOMA 1	NAT	× ENNA 1	Select pos 🔻 🔤 🖪 두2 S
TUE 2	KRL	§ HKNM 1	KUH	× NOMA 2	NO 1	× ENNA 2	
TUE 3	SAF	§ HKNM 3	KUH	MUS	KRL	SAF	
TUE 4	× NOMA 3	BIO	§ HKNM 1	КИН	NOMA 5	× NOMA 2	9B HK1 WAA KJ+
TUE 5	× NOMA 4	BIO	§ HKNM 1	KUH	SAF 3	× NOMA 1	9B MA ISA 04
TUE 6	MUS	KRL		BIO	#TV 1	# TV 1	9B MAST OPE 03
WED 1	× NOMA 1	§ HKNM 6	SAF	SAF	× ENNA 2	КОН	9B MAST BRY
WED 2	EN	S HKNM 4	EN	BIO	8 ENNA 1	кон	∑ 😟 🚯 🚺 [1/1]: 8C EN
•						F.	
OV							
							it.

My **carefully selected** example is plain rubbish from a timetabling point of view. However, a more sensible timetabling example would not show all possible warnings that might happen, and this is the main point of my example. To sum this up **once more**:

A vertical drag/drop in a table from period A to period B is called a P2- operation. It might either perform a MOVEMENT of an activity or an INTERCHANGE of an activity with another activity. In both cases you have a choice of either accepting conflicts resulting from that or transfer conflicting activities to the Kickout list. A dialog shows you the results of the 4 different choices you can make. (In simpler cases with no conflicts you can just click on OK and proceed). In some cases it might matter what you call period A (i.e. start of drag) and period B.

6.2.3 P1: Move an Activity (Table unit) FROM Kickout list to Timetable (The older P1- button, still used in the heading in the heading in the Kickout list, but a drag/drop is much simpler)



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Perhaps the most frequent drag/drop operation: You drag an Activity (Table Unit) FROM the Kickout list and drop it in a cell in a timetable grid. This is lateral (or horizontal) drag/drop is most usually done in a class table but might also be done in a teacher table but NOT room table A P1-operation has fewer choices than a P2:

- In case the P1-operation gives conflicts then we might transfer conflicting activities to the Kickout list.
- We might accept the double assignments from the P1- operation (in the same way as we did for a P2- operation.)

_ **D** X T 1- Tplan - SAUDA ANSI [930] [Registered version] Files Edit Formats Functions Control Run Maintenance Compressed Help D C C 🔑 🕄 🕒 Y 🖻 🖆 (Q. 1 E = I+ + 🖡 **B S** P O School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection Full Text Tables Listings Various Selection 8C JOH LIE GYM1 GYM2 GYM3 SVØH 📝 Display kicked out activities MON 1 ??? 🔽 Display not laid activities MON 2 ××× Display erased activities MON 3 SΑ 1A # SK Display parked activities C EN MON 4 MON 5 Display selected activities MON 6 Select pos 🔻 📃 🖪 F2 S TUE 1 TUE 2 8C KRØ1 TUE 3 8C KRØ JOH <mark>GY</mark> TUE 4 BIC 8C KRØ LIE SVØH KLR SAF TUE 5 171]: 10A NO 1 171]: 10A NAT TUE 6 MA Ė WED 1 1/1 1: 8C KRL NO WED : WED 3 SAI BIO WED 4 WED ! WED 6 THU 1 KUE KUH THU 2 EN THU 3 THU 4 NO THU 5 THU 6 FRI 1 FRI 2 TV FRI 3 NO MA FRI 4 FRI 5 FRI 6 SELECT 8C JOH GY KRØ1 CAT: 3

Assume we have this selection from an earlier timetable run:

This table is created in the following way: We have a kickout of a block activity 8C KRØ1 (P.E.). We use as Category: Only activity and included in the selection all rooms which 8C KRØ1 could use and the above table is the result. When inspecting the room there seems to be little hope here due to all room blockings. (The school shares PE- rooms with another school.) There are two red periods here (i.e. being blocked for 8C KRØ1), WED 6 and THU 6. The latter looks in particular little promising, but we make a try with WED 6. The result is the following dialog:

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Here we get the information why WED 6 is red: Both 8B KRØ1 and 8C KRØ1 are requiring the same room: SVØH. Assume we accept that conflict and we get this dialog:



Surprise, surprise!! Now Tplan is telling us that this P1- operation may be done without conflicts while it is quite obvious that we are lacking a room in WED 6. The correct interpretation of the message above is: There are no conflicts with the intended P1- operation with respect to classes and teachers while room conflicts are ignored. In many cases rooms may be changed in another way and the above info is useful even if it not 100 % correct. (In real life I guess that the school would go along with this compromise.)

We showed a few simpler P1- operations in our introduction and further explanation should not be needed.

6.2.4 PO: Move an Activity (Table unit) FROM Class Timetable to Kickout list

P0 is exactly the reverse of P1 operation but works only in a Class Table (for lateral drags in teacher/room see next paragraph).

A lateral drag of a class cell transfers that activity (table unit) from timetable to kickout list. This operation will never give new conflicts but you get this warning to confirm the transfer:

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You might say that the above dialog is unnecessary since you never get new conflicts. However, it very easily happens that you do a lateral drag of a class cell inadvertently and the above dialog gives you the chance to regret that.

An identical way of transferring an activity to the Kickout list is to click: Ctrl + Del on a cell and this table unit are transferred to the kickout list. This operation works ALSO for a teacher or room cell.

I very seldom do it, but the same drop technique may be used for Full Text Grid: Go to Functions> Settings > Timetable. You get this dialog:

Settings	_	_	2.						2		x
Register:	E <u>r</u> ror	<u>O</u> ther	<u>S</u> ave	<u>C</u> olours	Comp	pressed	<u>T</u> imetable	Export	Individual		
Print Tir	netable										
Print fro	m position		1	•			<u>7</u> 00 🔀	tent of c	ells in Full tex	:t	
Print to	position		6	•		🔽 Dis	splay empty c	lass colu	umns		
	new dau i	names			m	📝 Dis	splay empty to	eacher c	olumns		
		T:				🔽 Dis	splay empty re	oom colu	imns		
Individu R D :	ial IU days	: I imetab	les:			📃 Dis	splay full clas	s name			
Prin	t as A- and	18- Weel	< Autoritut			Placer	ment signs:				
Δ. A · Me	ek (ext	B	- week	text		Blocke	ed			В×	
						Pre-as	signed			#	
📃 🔲 Do	not print ur	nits conta	ining sub	į, names		Assign	ned on bound	dary		١.	
nu	l;null;B*					Placed	d in Sequenc	æ		S	j
Do	not print m	issina roo	ms (##R	оомі		Placed	d to same da <u>j</u>	y		×	
Class te	achers			,			<u>D</u> efault	t placem	ent sign 🛉		
CLM1			CLM2			Calvas					
						Full	name	ons			
🚺 🔽 Use	HMTP mo	otor in cle	ar text ta	ble							
•	ОК				×	Cancel				<u>H</u> elp	

Down at the bottom you see:

Use HMTP motor in clear text table.

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By checking this option P1, P2 and P4 will behave as explained for KomprGrid. I have not tested all possibilities here and don't believe that this will be used much. If you uncheck this option, you are back to old interchange rules in Full Text Grid, like this:

Tplan - Interchange table units		×
BEFORE MOVE / INTERCHANGE	AFTER MOVE / INTERCHANGE	
THU 6:88 KLR L+V 16	THU 6:88 SAF AUS 16	Select new room
		All periods
THU 2:88 SAF AUS 16	THU 2:88 KLR L+V 16	Select new room
		All periods
The teacher ALIS is not available in the new	v position THUS (is busy doing 100 EN 09	A)
		·)
		-
✓ Interchange	X Cancel	? Help

This technique was earlier very useful and explained in current user manual, but I regard the new drag/drop technique as considerable better.

6.2.5 P6: Teacher and Room changes or interchanges.

In the previous paragraph we stated that a lateral drag of a class cell transferred that activity to the kickout list. **However, a lateral drag of a teacher or room cell means a CHANGE or INTERCHANGE of this teacher or room.** Assume we have a teacher table like this:

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🏆 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]								
Files Edit Formats	Functions Contr	ol Run Mainter	nance Compresse	d Help				
	r	1	Ð					
School Teachers Teac	cher pools Classes	Rooms Subjects	Blocks Periods S	Steering 🚺 🔸 🕨				
Table	RØD	AUS	BIR	BRE				
MON 1		8B SAF	10C ¥ NOMA 1					
MON 2 910 - 955	9B EN	8B × ENNA 1	10C # NOMA 2					
MON 3 1005 - 1050		8B × ENNA 2						
MON 4 1120 - 1205								
MON 5 1215 - 1300		10A # TV 1	9B SAF					
MON 6 1310 - 1355		10A # TV 1	9B KRL	8C MUS				
TUE 1	10B # ENNA 1	10C EN	9B SAF					
TUE 2 910 - 955	10B # ENNA 2		10C ¥ NOMA 3					
TUE 3 1005 - 1050			10B SAF	9C MUS				
TUE 4 1120 - 1205		8B SAF	10C SAF					
TUE 5 1215 - 1300		8B KRL	10C 🕺 NOMA 4					
TUE 6 1310 - 1355		10A # TV 1	8A NO 1	9A MUS				
WED 1		10A # ENNA 2	9B SAF					
WED 2 910 - 955	9B EN	10A 🕺 ENNA 1	10C NO					
WED 3 1005 - 1050								
WED 4 1120 - 1205				8B MUS				
WED 5 1215 - 1300		8B SAF	10C SAF					
WED 6 1310 - 1355		8B ENNA 3		9B MUS				
THU 1	B*	8B ENNA 3		8A MUS				
THU 2 910 - 955	B*	8B SAF	10B SAF	10C MUS				
THU 3 1005 - 1050	B*		10C NO					
THU 4 1120 - 1205	10B EN	10A ENNA 3	10C SAF					
THU 5 1215 - 1300		8B KRL	10C KRL					
THU 6 1310 - 1355		10C EN	8A NO 1					
FRI 1	10B EN							
FRI 2 910 - 955	9B 🕺 NAEN 1		8A NO 1					
FRI 3 1005 - 1050	9B 🛎 NAEN 2		10B SAF	10A MUS				
FRI 4 1120 - 1205		10A ENNA 3	10C NO	10B MUS				
FRI 5 1215 - 1300		10C # ENNA 1						
FRI 6 1310 - 1355		10C ¥ ENNA 2						
•				۶.				
MAIN PROGRAM COMP	LETED							

For some reason the subject 8B SAF (4 periods) must change teacher from AUS to BRE. In return teacher AUS gets 4 periods in subject MUS. After a set of lateral drag/drops you get this situation:

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TP 1- Tplar	n - SAUDA UNGDO	MSSKOLE [914] [Registered version	
<u>Files</u> Edit	t Form <u>a</u> ts F <u>u</u> nc	tions C <u>o</u> ntrol	<u>R</u> un <u>M</u> aintenance	Com <u>p</u> ressed
Help				
		ㅋㄷㅋㅋㅋ		
School T	eachers Teacher p	ools Classes Roc	ms Subjects Bloc	ks Periods S 💶 🔺
Table	RØD	AUS	BIR	BRE B 🔺
MON 1			10C ¥ NOMA 1	8B SAF
MON 2	9B EN	8B 🕺 ENNA 1	10C ¥ NOMA 2	
MON 3		8B 🕺 ENNA 2		9
MON 4				
MUN 5			9B SAF	
MUN 6			9B KRL	8L MUS
	108 9 ENNA 1	TUC EN	9B SAF	9
	TUB 8 ENNA Z		TUC 9 NUMA 3	9
		SC MUS	TUB SAF	
			TUC SAF	86 SAF
		86 KHL	OA NO 1	
				JA MUS J
WED 1		TUA º ENNA Z	3B SAF	
WED 2	JB EN	TUA × ENNA T	IUL NU	.
WED 4				
		OD MUJ	10C SAE	OR SAF
WED 6		8B ENNA 3	TUC JAI	98 MIIS 9
	R=	OD ENNA 3		
	D R=		10B SAF	R SAF 9
THU 3	B≖			00 JAI 2
THU 4	10B EN	10A ENNA 3	10C SAF	9
THU 5		8B KRL	10C KRL	<u> </u>
THU 6		10C EN	8A NO 1	
FBI 1	10B EN			
FRI 2	9B X NAEN 1		8A NO 1	
FRI 3	9B X NAEN 2	10A MUS	10B SAF	
FRI 4		10A ENNA 3	10C NO	10B MUS 9
FRI 5		10C # ENNA 1		.
•				4
ОК				

Such operations never give new conflicts and no messages are displayed. In THU 2 we notice an interchange of teachers. The remainder is a set of teacher changes. This is a fast and simple process. Assume we have a room table looking like this:

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This is the table of the crafts rooms in the school. In hindsight you realize that teacher HØY can only teach in room VERK while the other teachers accept both rooms. A few lateral drag/drops easily perform the needed interchanges like this:

🏆 1- Tplan - SAUDA 💶 💷 💻 🌉						
Files Edit Formats Functions						
Control	Run Mainten	ance				
Compress	ed Help					
		HELE				
School T	eachers Teach	ner pools Cla 💶 📐				
Table	VERK	TEGN F				
<u>MON 1</u>	KUH TEI	KUH LAN				
<u>MON 2</u>	KUH TEI	KUH LAN				
<u>MON 3</u>	SKEV TEI	SKEV HØY				
<u>MON 4</u>	SKEV TEI	SKEV HØY				
<u>MON 5</u>	TV 1 TEI	TV 1 HØY				
<u>MON 6</u>	TV 1 TEI	TV 1 HØY				
<u>TUE 1</u>	TV 1LØV	TV 1 BRY				
<u>TUE 2</u>	KUH TEI	KUH LAN				
TUE 3	KUH TEI	KUH LAN				
TUE 4		KUH LAN				
TUE 5	KUH TEI	KUH LAN				
<u>10E 6</u>	IV 1 IEI					
WED 1		KOH LAN				
WED 2	KOH TEI	KOH LAN				
WED 3	KUH TEI	KUH LAN				
WED 4		KUH LAN				
WED 5		KUH LAN				
WED 6		KUH LAN				
	KUH TEI	KUH LAN				
		KUH LAN				
	SKEV LAN					
	TV 1WEL	TV 1LAN				
	TV 1WEI	TV 1 LAN				
		TV 1 LAN				
FBL A		KUHLAN				
FBI 5		KUH LAN				
FBI 6	TV 110V	TV 1 BBY				
		· ·				
MAIN PRO	GRAM COMPL	ETED				

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A P6 – operation is a fast and simple process and highly to be recommended. It may be slightly awkward if there is some distance on the screen between the columns you want to change or interchange. Try therefore to have "similar" teachers or rooms in the same region in your basic data entry – or create a selection with the teachers in question.



6.2.6 F2: Editing in a timetable cell (The F2- dialog)

We have a section of the timetable looking like this:

TP 1- Tplan - SAUD	🦷 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]								
<u>Files</u> <u>E</u> dit Form	<u>Files Edit Formats Functions Control Run Maintenance Compressed H</u> elp								
School Teachers	Teacher pools Cl	asses Rooms Su	ibjects Blocks P	eriods Steering (Compressed Table	Full Text Table	s Listings Vario	ius	
Table	10A	10B	10C	R+D	AUS	BIR	BRE	BRU	
MON 1	KR+ LIE GYM3	KR+ SOL	NOMA 1 SAN 07		8B SAF 16	10C NOMA 1 09			
MON 2 910 - 955	NO 1 BRY 18	NO HYS 08	NOMA 2 SAN 04	9B EN 01	8B ENNA 1 16	10C NOMA 2 07			
MON 3 1005 - 1050	SKEY JOH GYM2	SKEV TEI VERK	SKEV H+Y TEGN		8B ENNA 2 16			3C HKNM 6 05	
MON 4 1120 - 1205	SKEV JOH GYM2	SKEV TEI VERK	SKEV H+Y TEGN						
MON 5 1215 - 1300	TV 1 TEL VERK	TV 1XX	TV 1 AUS 17		10A TV 1 17	9B SAF 24			
MON 6 1310 - 1355	TV 1 TEL VERK	TV 1XX	TV 1 AUS 17	8C MUS MUSR	10A TV 1 17	9B KRL 24			Ŧ
ОК									ŧł

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TV 1 in MON 5-6 is a block of classes' 10A-10B-10C and several teachers. For some reason teacher AUS changes with teacher BRE and teacher XX changes with teacher BRU and these new teachers shall also use different rooms. Click on any of the TV 1- cells and click F2. You get this dialog:

Edit activity	-				×	
Activity ID 77	Activity type 3	Activity 10ATV 1	Day MON	Period 05	Number of periods 01	
006 TV6	AUS 17		MON	Period 05	Number of periods	
001 TV1 002 TV2 003 TV3 004 TV4 005 TV5 006 TV6 E dir Content	HYS 08 TEI VERK H+Y TEGN XX YY AUS 17		Subject TV6	Full name 10 TV6	Reference class 10C	
Class 10A	Teacher ▼ AUS	Room 17	▼ Subject	Full name ▼ 10 TV6	Reference class ▼ 10C ▼	
☑ Display only available teachers and rooms						
✓ <u>O</u> K X Cancel M <u>U</u> ndo actual M Undo <u>a</u> ll ? <u>H</u> elp						

There is drop down list for teachers. Click that and substitute AUS with BRE. Later click on drop down list for rooms and select new room. You repeat that for teacher XX and BRU. This must be done both for both period MON 5 and MON 6. Eventually you end up with a table like this:

🏆 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]									
<u>Files</u> Edit Form	<u>Files Edit Formats Functions Control Run Maintenance Compressed Help</u>								
School Teachers	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Table Full Text Tables Listings Various								
Table	10A	10B	10C	R+D	AUS	BIR	BRE	BRU	
MON 1	KR+ LIE GYM3	KR+ SOL	NOMA 1 SAN 07		8B SAF 16	10C NOMA 1 09			511
MON 2 910 - 955	NO 1 BRY 18	NO HYS 08	NOMA 2 SAN 04	9B EN 01	8B ENNA 1 16	10C NOMA 2 07			- 16
MON 3 1005 - 1050	SKEV JOH GYM2	SKEV TEI VERK	SKEV H+Y TEGN		8B ENNA 2 16			9C HKNM 6 05	
MON 4 1120 - 1205	SKEV JOH GYM2	SKEV TEI VERK	SKEV H+Y TEGN						
MON 5 1215 - 1300	TV 1 TEL VERK	TV 1 BRU FORM	TV 1 BRE KANT			9B SAF 24	10A TY 1 KANT	10A TV 1 FORM	
MON 6 1310 - 1355	TV 1 TEL VERK	TV 1 BRE KANT	TV 1 BRU FORM	8C MUS MUSR		9B KRL 24	10A TY 1 KANT	10A TV 1 FORM	r
ОК									

The F2 –**dialog is a completely general way to modify the cell content to what you prefer.** F2 is a somewhat slower method than the lateral drags shown in previous paragraph but being more general and highly recommended for that reason.

Lasse's comment to the F2-dialog is given here:

When working in the compressed table you can edit an activity by placing the cursor on the activity and pressing the F2 key. This has been the case for many years. The news in version 29 is that the dialog has been given a full makeover.

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Edit activity					×			
Activity ID 21	Activity type 3	Activity 1p HF1A 1	Day tue	Period 03	Number of periods 01			
002 bkh	JB 129	"lgr bkh"	Day Tue	Period	Number of periods			
Actual content	t	-						
Class 1p	Teacher JB	Room 129	Subject bkh	Full name 1qr bkh	Reference class 1p			
Edit content								
Class 1p	Teacher JB	Room 129	Subject	Full name	Reference class			
Display or	Display only available teachers and rooms							
	к	X Cancel	⊾ <u>U</u> ndo actual	🖍 Undo <u>a</u> ll	? Help			

First of all you see the combo box containing all the units included in the activity under consideration.

Edit activity					×		
Activity ID 21	Activity type 3	Activity 1p HF1A 1	Day tue	Period 03	Number of periods 01		
001 bkh	E B 128	"lp bkh"	Day Tue	Period	Number of periods		
001 bkh	EB 128	"lp bkh"					
002 BRA 003 muh 004 muh	HL 132 BT 134	"lq nuh" "lq nuh" "lr nuh" 120	Subject bkh	Full name 1p bkh	Reference class 1p		
Edit content							
Class 1p	Teacher EB	Room 128	Subject	Full name	Reference class		
Display o	Display only available teachers and rooms						
	<u>-</u> K	X Cancel	い <u>U</u> ndo actual	🖍 Undo <u>a</u> ll	? Help		

This activity is made out of 4 units. Every unit can be edited in turn. Only one unit can be edited at a time.

The "Display only available teachers and rooms" checkbox gives you the ability to select another available room and/or teacher for a unit in the activity. You can also edit the subject, the full name and select another reference class.

When you are editing teacher and room it is mandatory that you have selected "Final adjustments" in the Options dialog.

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😨 Options for main program		
Commands	Parameters	
Ignore syntax errors	Parameter	Value
Pollow run in DUS environment Indirect room allocation	Number of new TK's	100
✓ Absolute room allocation New room allocation	Min Per	0
✓ Generate new TK's	Max Difference	30
Same SUBJECT to same room		
Old iteration		
Join single periods		
Module table		
Stepwise room allocation		
Desires Week Balance		
🗖 SUDOKU		
E Default	Phase of main program	
Category for selections	C Allocating the timetal	ole
Pure class activities	 Final adjustments 	
Display selected parameters prior to HMTP motor run		
✓ OK X Cancel		<mark>?</mark> <u>H</u> elp

You will find the Options dialog either in the Run dialog or here:

If you forget to set the phase of the main program, the timetable motor will reset any of the changes you have made which does not match the subjects and other registers.



6.2.7 Major changes in a timetable

It happens that you have completed your timetable satisfactory and then something unforeseen happens like getting a different teacher than expected or you lose or receive additional classes. You hate to lose all the work you have invested in your current timetable and want to salvage as much as possible of this. This could maybe be tackled in a number of ways. I believe the most sensible method would be to modify your table cells in **LIST FORMAT** (i.e. KlarGrid).

You have a table looking like this:

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🏗 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]								
<u>Files</u> Ed	it Form <u>a</u> ts	Functions Con	trol <u>R</u> un <u>M</u> a	intenance Co	mpressed			
Help								
School T	eachers Tea	cher pools Classe	s Rooms Subj	ects Blocks F	Periods Steerir 💶 🕨			
Table	ØVR	RØD	AUS	BIR	BRE			
MON 1			8B SAF 16	10C X NOMA 1 (
MON 2		9B EN 01	88 8 ENNA 1 16	10C X NOMA 2 (
<u>MON 3</u>			88 8 ENNA 216					
MON 4								
MON 5			10A # TV 117	98 SAF 24				
<u>MON 6</u>			10A # TV 117	98 KRL 24	8C MUS MUSR			
TUE 1		108 8 ENNA 1 0	10C EN 09	98 SAF 24				
TUE 2		10B 🛛 ENNA 2.0		10C X NOMA 3 (
TUE 3				10B_SAF 08	9C MUS MUSR			
<u>TUE 4</u>			8B_SAF16	10C SAF 09				
<u>TUE 5</u>			88 KRL 16	10C 🖲 NOMA 4 (
<u>TUE 6</u>			10A # TV 117	8A NO 111	9A MUS MUSR			
WED 1			10A 8 ENNA 21	98 SAF 24				
WED 2		9B EN 04	10A 8 ENNA 1 1	10C NO 09				
WED 3								
WED 4					8B_MUS MUSR			
WED 5			8B SAF 16	10C SAF 09				
WED 6			8B ENNA 316		98 MUS MUSR			
THU 1		B*	88 ENNA 316		8A MUS MUSR			
THU 2		B*	8B SAF 16	10B SAF 08	10C MUS MUS			
THU 3		B×		10C NO 09				
THU 4		10B EN 01	10A ENNA 3 17	10C SAF 09				
THU 5			88 KRL 16	10C KRL 09				
THU 6			10C EN 09	8A NO 111				
FRI 1		10B EN 08						
FRI 2		98 × NAEN 1_04		8A NO <u>111</u>				
FRI 3		98 × NAEN 2.04		10B SAF 08	10A MUS MUS			
FRI 4			10A ENNA 317	10C NO 09	10B MUS MUS			
FRI 5			10C 8 ENNA 1 0		· ·			
•					4			
MAIN PRO	OGRAM COMP	PLETED						

Your music teacher is BRE will not appear and in addition you lose your music room MUSR and you shall use room KANT while teacher ØVR substitutes for BRE. This could give you a quite messy adjustment problem. A simple way is this:

Go to Full Text Table. Go to Full Text List (= ctrl + F8). You then enter the table in List Format. Go to Edit menu and select Advanced Search and Replace. You enter this dialog:

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TP FULL	THE FULL TEXT - Search - Search and Replace										
	[c	LASS	SUBJECT	FULL NAME	TEACHER	ROOM	DAY	POS	Basic class	ACT.NAME	REF-CLASS
Search fo	or				BRE	MUSR					
Replace	with				ØVR	KANT					
 ✓ Sear ✓ Case ✓ <u>D</u>ispl 	Image: Search for all cell content Image: Erase all Image: Case sensitive Image: Erase all Image: Display changes Erased										
_	<u>S</u> earch	·	🚯 <u>R</u> eplace		🛉 Update	Upd.	ate and close		se	? <u>H</u> elp	
Index	CLASS	SU	BJECT (FUI	LL NAME TE.	ACHER R	оом (р	IAY F	POS (E	Basic class	ACT.NAME	REF-CLASS
00100	8A	MU	S 8A	MUS BR	E M	USR T	HU 1	8	3A	MUS	8A
00101	8B	MU	S 8B	MUS BR	E M	USR V	/ED 4	1 8	3B	MUS	8B
00102	8C	MU	S 8C	MUS BR	E M	USR M	ion e	6 8	3C	MUS	8C
00289	9A	MU	S 9A	MUS BR	E M	USR T	UE E	6 9	1A	MUS	9A
00290	9B	MU	S 9B	MUS BR	E M	USR V	/ED E	6 9)B	MUS	9B
00291	9C	MU	S 9C	MUS BR	E M	USR T	UE 3	3 9	9C	MUS	9C
00445	10A	MU	S 104	A MUS 🛛 🛛 🗛	E M	USR F	RI 3	3 1	0A	MUS	10A
00447	10B	MU	S 10E	3 MUS BR	E M	USR F	RI 4	1	OB	MUS	10B
00449	10C	MU	S 100	CMUS BR	E M	USR T	HU 2	2 1	0C	MUS	10C

In this case you enter the teacher and room which shall be placed and placing in second line the substitutes. Click Replace and you end up with:

TP FULL	🔢 FULL TEXT - Search - Search and Replace										
	CLASS	s (su	BJECT	FULL NAME	TEACHER	ROOM	DAY	POS	Basic class	ACT.NAME	REF-CLASS
Search fo	or				BRE	MUSR					
Replace v	with				ØVR	KANT					
 ✓ Searce ✓ Case ✓ Displate 	✓ Search for all cell content ✓ Case sensitive ✓ Display changes										
_ Q.	<u>S</u> earch	0	<u>R</u> eplace .		🛉 Update	🗸 🔨	date and close		ose	? <u>H</u> elp	
Index 0	CLASS	SUBJECT	T (FULI	L NAME TE	ACHER	ROOM	DAY	POS	Basic class	ACT.NAME	REF-CLASS
00100	84	MUS	8A M	1US ØV	/R	KANT	THU	1	8A	MUS	8A
00101 8	8B	MUS	8B M	IUS Ø۱	/R	KANT	WED	4	8B	MUS	8B
00102 8	8C	MUS	8C M	IUS Ø۱	/R	KANT	MON	6	8C	MUS	8C
00289	94	MUS	9A M	1US ØV	/R	KANT	TUE	6	94	MUS	9A
00290	9B	MUS	98 M	1US ØV	/R	KANT	WED	6	9B	MUS	9B
00291	90	MUS	9C M	1US ØV	/R	KANT	TUE	3	90	MUS	9C
00445	10A	MUS	10A	MUS ØV	/R	KANT	FRI	3	10A	MUS	10A
00447	10B	MUS	10B	MUS ØV	/R	KANT	FRI	4	10B	MUS	10B
00449	10C	MUS	10C	MUS Ø\	/R	KANT	THU	2	10C	MUS	10C

This is as wanted. Click: Update and close and you end up with:

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TP 1- Tplan - SAI	UDA UNGDOMSSK	(OLE [914] [Re	gistered version	ŋ 🗖 🗖	x		
<u>F</u> iles <u>E</u> dit For	rm <u>a</u> ts F <u>u</u> nctions	C <u>o</u> ntrol <u>R</u> u	n <u>M</u> aintenanc	e Fulltext <u>I</u>	<u>H</u> elp		
School Teacher	s Teacher pools	Classes Room:	s Subjects Blo	cks Periods S	iter 💶 🕨		
Full text - Table	ØVR	RØD	AUS	BIR	BRE		
MON 1			8B SAF 16	10C X NO 09			
MON 2		9B EN 01	88 × EN 16	10C X NO 07			
MON 3			88 × EN 16				
MON 4							
MON 5			10A # TV6 17	9B SAF 24			
MON 6	8C MUS KANT		10A # TV6 17	98 KRL 24			
TUE 1		10B × EN 08	10C EN 09	9B SAF 24			
TUE 2		108 × EN 08		10C X NO 09			
TUE 3	9C MUS KANT			10B SAF 08			
TUE 4			8B SAF 16	10C SAF 09			
TUE 5			88 KRL 16	10C X NO 07			
TUE 6	9A MUS KANT		10A # TV6 17	8A NOST 11			
WED 1			10A X EN 17	9B SAF 24			
WED 2		9B EN 04	10A X EN 17	10C NO 09			
WED 3							
WED 4	88 MUS KANT						
WED 5			8B SAF 16	10C SAF 09			
WED 6	9B MUS KANT		8B EN 16				
THU 1	8A MUS KANT	B×	8B EN 16				
THU 2	10C MUS KANT	B*	8B SAF 16	10B SAF 08			
THU 3		B*		10C NO 09			
THU 4		10B EN 01	10A EN 17	10C SAF 09			
THU 5			88 KRL 16	10C KRL 09			
THU 6			10C/EN/09	8A NOST 11			
FRI 1		10B EN 08					
FRI 2		98 × EN 04		8A_N0 <u>ST 11</u>			
FRI 3	10A MUS KANT	98 × EN 04		10B SAF 08			
FRI 4	10B MUS KANT		10A EN 17	10C NO 09			
FRI 5			10C X EN 09				
FRI 6			10C X EN 09				
Full text - Table (CTRL + F5)						

Timetable has been adjusted completely in one simple step. I could easily complicate the above example, but hopefully I got the general idea presented.

The next 2 paragraphs are a direct copy of current user manual since no modifications have been done here (but very definitely look on the last paragraph.)

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6.2.8 THE CELL CONTENT IN KOMPRGRID AND SKEMAGRID.

The Cell content in Compressed table / Full tex	kt table 📃 🗖 🗙						
1 Screen - Compr 2 Screen - Full text 3 Printer - Compr 4 Printer - Full text							
 Classes - Show basic class ✓ Classes - Show special (preass:: #, border: set ✓ Classes - Show activity Classes - Show full name Classes - Show teacher Classes - Show teacher Classes - Show basic class ✓ Teachers - Show basic class ✓ Teachers - Show special (preass:: #, border: set ✓ Teachers - Show activity Teachers - Show activity Teachers - Show reference class Teachers - Show basic class ✓ Teachers - Show reference class Teachers - Show basic class ✓ Teachers - Show reference class ✓ Teachers - Show basic class ✓ Room - Show basic class 	quence: §, same day: ¤) sequence: §, same day: ¤) uence: §, same day: ¤)						
➡ Load	E⊨ Same as screen						
🗸 OK 🛛 🗶 Cancel	<mark>?</mark> <u>H</u> elp						

You select this by choosing: Functions > Settings > Compr (or Timetable) > Content of cell in Compr (or Full text). The following dialogue is shown:

For each resource (class/teacher/room) we may require 6 types of information. We show this completely for classes and mention what is different for teachers and rooms

Classes

Show basic class: The basic class is the first class in the activity.

Show special: Shows the special symbols mentioned in previous paragraph. We might gradually introduce new special symbols.

Show activity: Name of activity (you will normally want this)

Show full name: Shows full name for corresponding subject. Normally you don't want this in compressed table, but you may want full name in full text tables.

Show teacher: Shows teacher initial. In KomprGrid not all teacher/room groups are shown but you get a complete survey in SkemaGrid. (Full text)

Show room: Shows corresponding room for teacher.

Teachers

5 parameters the same as for classes (teacher is lacking). In addition we get a new parameter:

Show reference class: **Basic class is the first class in an activity. Reference class is the class column under which this particular teacher is placed in full text tables.** (We might possibly want to modify this in the final stages)

Rooms

5 parameters are the same as for classes but reference class is shown instead of room.

Exactly the same information might be shown for full text tables *and make a note of you have a different cell content definition for the printing of tables and what is shown on the screen.* When **finally printing your tables check also the various facilities mentioned in the File- menu**

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In the above figure I have indicated my own preference when working with compressed tables; in fact I might even remove some of the shown checkmarks to compress the survey.

6.2.9 Special activities and Rotation or Change of Days

Register for Special activities									
	Class/	Act.Name	OUT	OF :	IN	TO :			
	Teacher		DAY	POS.	DAY	POS.			
00001	XXX	CONF2	MO	1	TU	5			
00002				2		6			
00003	XXX -	DOT a	TH	4					
00004				5					
00005				6					
		1							

This is an alternative way for making movements/interchanges in compressed tables.

We do as much as possible in compressed tables, but this register must be used in case the activity is not included in a class column in compressed tables.

These cases are:

- 1. Conference activities (XXX)
- 2. Free time for teachers included in timetable. (As example half-day free for teachers),
- 3. LUNCH for teachers.

The procedure for using the above register (Special activities) and also the register in next paragraph (Deletion of many activities) MUST be as follows:

Enter the adjustments you require in these registers.

- 1. Run a new Transfer program (to let Hmtp get hold of these adjustments).
- 2. Rerun Analysis program and build of course on current timetable.
- 3. Such adjustments will frequently have consequences for the room allocation which should be rerun. (use Run option: New room allocation for that)
- 4. Check that your compressed table is adjusted as required. If there are errors, return to point 1-3 and correct.
- 5. When adjustments are as required, BLANK what you have entered in Special activities and Deletion of many activities. Finish the process with a final Transfer run to let Hmtp also have these registers blanked, and you may then continue with normal adjustments.

Definition of register:

1. Class/Teacher

Usually the basic class for the activity which shall be placed or deleted. The most frequent class symbol here will be XXX (conference class).

A teacher initial here signifies we are adjusting LUNCH for a teacher.

If BLANK field, we use class symbol from previous line.

2. Act.Name

Activity name for the activity to be placed or deleted. If BLANK field, we use name from previous line.

3. OUT OF: DAY POS

Day and position where the activity shall be deleted. We use these day symbols: MO, TU, WE, TH and FR. If day symbol is lacking and position is filled in, we use day symbol from previous line. **At least** one of the two position field must be filled in, to make this line effective.

4. IN TO: DAY POS

Day and position where the activity shall be placed, and the rules are as above. You may perform deletion and placement in the same line.

In the above figure we have done the following:

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- 1. Conference period, CONF2, is moved from MON 1-2 to TUE 5-6.
- 2. Half day free for teacher DOT is deleted from THU 4-6

6.2.9.1 Interchange days, rotate the periods on a day

It is not unusual that we detect possibilities for improving some desirable requirements by interchanging two days completely or by rotating the periods on a day. (For instance in such a way that "difficult" subjects get better teaching time or to improve some teacher tables.) It is very difficult to do such adjustments the traditional way, and we use two conventions to achieve this

***UKE** If this name is entered in the field Act.Name it signifies that the next 5 (10) lines make up a unit, and defines the new order of the days.

***ROTER** If this name is entered in the field Act.Name and you enter a day symbol in the OUT-field, the next lines define the new order of the periods on that day.

Register	Register for Special activities								
	Class/	Act.Name	OUT	OF :	IN	TO :			
	Teacher		DAY	POS.	DAY	POS.			
00001		*UKE	МО						
00002			WE						
00003			TU						
00004			TH						
00005			FR						
00006									
00007		*ROTER	FR	6					
00008				5					
00009				4					
00010				3					
00011				2					
00012				1					

This figure shows an example:

In the figure we have stated that we shall interchange Tuesday and Wednesday. We have rotated the periods on Friday completely making the last period the first etc. When finished data entry here, we rerun Transfer program and continue with an Analysis and build on current timetable. Check result and blank this register and rerun Transfer program. Follow exact same procedure as explained above.

6.2.10 DELETION OF MANY ACTIVITIES

Register for Deletion of many activities									
	ACT	PERI-	CLA.	NAME	TEA-	ROOM	Γ		
	REF	OD	/YR.		CHER		(
00001				*SOC					
00002				*SCI					
00003			7A				Γ		
00004	PRE				AKS				
00005									
					1		Γ.		

We access this register through tab sheet: Various. The menu selection transfer to this register:

This register if defined exactly the same way as register for Activity References. The function of the register is:

In the register we define in the usual way an activity set but we disregard activities being preassigned in positional directives. This complete activity set is removed from current timetable if we run:

Transfer + Analysis + Build on partial table

It is usually an advantage that such a removal does take effect for presassignment, but occasionally we will also remove these. This is achieved by entering the reserved identifier PRE in the ACT.-REF field.

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In the figure above we have required to remove all teaching in social studies and science. We have also removed all activities for class 7A and teacher AKS and for the latter we also remove possible preassignments. It is obvious that this deletion technique is very simple and efficient when we want to remove larger parts. In the file Lian.nnn we are informed about what we have deleted; for instance like this:

**** WARNINGS **** ACTIVITIES BEING REMOVED BY DEL-COMMAND: 8A TV 1 9A TV 1 9A TV 1 10A TV 1 10A TV 1 PREASSIGNEMENTS BEING REMOVED : 10A TV 1 10A TV 1

A frequent situation is that some year levels have same timetable for a whole year while other year level changes tables on a half year basis. Assume the latter being the case for year level 1g. The following figure show three alternative ways of deleting activities in year level 1g:

Registe	Register for Deletion of many activities									
	ACT	PERI-	CLA.	NAME	TEA-	ROOM				
	REF	OD	/YR.		CHER		Comments			
00001			1g				year level 1g deleted from table			
00002										
00003			1g	*NSP			year level 1g pure class activities			
00004							deleted from table			
00005										
00006			1g	*NGP			year level 1g pure class activities			
00007							and small parallels deleted			
00008							from table			
00009										

We refer to the Definition fields in Positional directives for definition of the reserved identifiers *NSP and *NGP

This is a very efficient way of deleting a year level or parts of a year level. In particular if you in the continued runs for creating new tables for 1g use the run option: Absolute room allocation, the other year levels will keep their former tables 100% intact.

Other cases for using such deletion technique is for timetabling project weeks for various classes, or if certain teacher teams are creating their own timetables more or less independent of the rest of the school.

Running in interactive mode, we will need the use of this register more frequently: During this process we might need to change teachers. You are not much helped only by doing the change in subject register since the original teacher is still in the current timetable which overrules subject register. If you remove the activity with teacher change in the register above, then this activity is removed from current timetable and your changes in subject register will take effect.

Finally, when working with this register follow the same procedure as explained in previous paragraph.

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6.2.11 Use of the Kickout list in other contexts. (Manual assignments)

The heading of the Kickout list look like this:

99 % of the time you will need to display only the Kickout List. Normally you then select an activity in this list and perform a P4- operation as explained. If you click Select pos and do that, the next button will then show the P1symbol and you might use this dialog for P1. (My strong preference is to use directly a lateral drag/drop for P1). Alternatively you might want to modify the content of a Kickout by using the F2- button above. The S – button will be explained shortly.

The check mark: Display not yet allocated activities allow you to inspect all activities remaining to be allocated.

🌇 1- Tplan - SAUDA UNGDOMSSK 🛄 💷 💻 💴							
<u>Files Edit Formats Functions Control Run</u>							
<u>Maintenance</u> Com <u>p</u> ressed <u>H</u> elp							
Teachers Teacher pools Classes Rooms Subjects							
Display kicked out activities							
🗹 Display not laid activities							
🕆 🗔 Display erased activities 🛛 🗙 🗙 📗							
🗍 🔲 Display parked activities 🛛 🕒 🖻							
] Display selected activities 🛛 🔂 🔂 🔂							
Select pos 🔻 📃 🖪 F2 S							

It could happen that you in the odd case needed to assign some of these activities manually. This is somewhat inconvenient since this list is usually very large. I must confess that I have not found the check mark: Display erased activities meaningful (It might get a meaning later) The check mark: Display parked activities is intended to cover the case where you only are working with a partial timetable; say you are working only with the upper forms of a table and disregard lower forms for the moment. By checking Parked activities you then also get access to lower forms and if needed you may manually assign some of these activities.

The really exiting check mark is the last: Display selected activities combined with the use of the S- button. By clicking that you get this dialog:

Select	special	acti	vities					Contraction and an		×
🔽 Ca	se sensit	tive						🗙 Erase		
Basic	class			Activity n	ame	Fag KUH		Lærer	Lokale	Holdbetegnelse
KLA	AKT	:	FAG	LÆR	LOKALE	"HOLDBETE	GN."	Specially sel	ected activities	
8A	KUH	:	KUH	LAN	TEGN	"8A KUH"				
8A	KUH		KUH	LAN	TEGN	"8A KUH"				
BA.	KUH		KUH	TEI	VERK	"8A KUH"				
BA.	KUH		KUH	TEI	VERK	"8A KUH"				
BB	KUH		KUH	LAN	TEGN	"8B KUH"				
BB	KUH		KUH	LAN	TEGN	"8B KUH"	=	-		
BB	KUH		KUH	TEI	VERK	"8B KUH"				
8B	KUH		KUH	TEI	VERK	"8B KUH"				
8C	ROH		KOH	LAN	TEGN	"8C KUH"				
8C	KUH		KOH	LAN	TEGN	"8C KUH"				
8C	KUH		KOH	TEL	VERK	"8C KUH"				
BC.	KOH		KOH	TEI	VERK	"8C KUH"				
9A	KOH		KOH	LAN	TEGN	"9A KUH"				
9A 0 A	KUH		KUH		TEGN	"9A KUH"				
9A 0 A	KUH		KUH	TEL	VERK	"9A KUH"				
9A OP	RUH		ROH	TEL	TERK	"9A KUH"	-			
эБ	KUI		KUH	LAN	TEGN	9D KUN"	Ţ			
	🖌 Ma	rk all			√ 0	ĸ		🗶 Escape		🖌 Mark all

In the first line I can define the set of activities I am interested in. Next I check the button Mark all down left, and that lit an arrow pointing to the right. Click on that and the activities to the left are moved to the right like this:

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Select special activities			×
✓ Case sensitive	Erase		
Basic class Activity name Fag	Lærer	Lokale	Holdbetegnelse
KLA AKT : FAG LÆR LOKALE "HOLD	BETEGN." Specia	Ily selected activities	
	9C 9C 9C 9C 9C 9B 9B 9B 9B 9B 9A 9A 9A 9A 9A 8C 8C 8C	KUH : KUH LIE KUH : KUH LIE KUH : KUH LIE KUH : KUH TEI KUH : KUH TEI KUH : KUH LAN KUH : KUH LAN KUH : KUH TEI KUH : KUH TEI KUH : KUH LAN KUH : KUH TEI KUH : KUH TEI KUH : KUH LAN KUH : KUH TEI KUH : KUH TEI KUH	"9C KUH" "9C KUH" VERK "9C KUH" TEGN "9C KUH" TEGN "9C KUH" VERK "9B KUH" VERK "9B KUH" VERK "9B KUH" VERK "9A KUH" VERK "9A KUH" VERK "9A KUH" VERK "8C KUH" VERK "8C KUH"
Mark all	K Escape	<u>H</u> elp	✓ Mark all

I am ready to make a different selection in the first line and get that to the left in the above figure, mark that and move these new activities to the right etc. (in case I make unfortunate selections I can mark parts of the right side and move that back to the left). By then checking on the last check marker I might end up with something like this:

TP 1- Tplan	🌇 1- Tplan - SAUDA UNGDOMSSKOLE [914] [Registered version]									
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts	F <u>u</u> nctions	Control Run	<u>M</u> aintenance	Com <u>p</u> ressed	d <u>H</u> elp				
) 🕞 🗛 (
Seheel Te		ahar paola L Cl	teoring Compressed Selection Full Tout, Tobles, Listing							
		le ese								
Selection	8A	LAN	IEI	VERK	TEGN	– 🔲 Display kicked out activities 🛛 🗳 🖾 🖄				
MON 1						– 🔲 Display not laid activities 🛛 🤗 ???				
MON 2		B*	10A # SKEV	# SKEV TEL	# SKEV HØY	🗖 🔲 Display erased activities 🛛 🛛 🗙 🗙 🗙				
MON 4		B*	104 # SKEV	# SKEV TEI	# SKEV HØY	📃 Display parked activities 🛛 🔹 🗩 🗩 🗩				
MON 5		Б×	10A # TV 1	#TV 1 TEI	#TV 1HØY	🔽 Display selected activities 🛛 🔊 🔊 🔊				
MON 6		B*	10A # TV 1	# TV 1 TEI	#TV 1HØY					
TUE 1						Select pos 🔻 🔡 🖪 F2 S				
TUE 2										
TUE 3						■ ? [172]: 8B KUH				
TUE 4						E = ? [272]: 88 KUH				
TUE 5						□ ····································				
<u>TUE 6</u>			10A # TV 1	# TV 1 TEI	#TV 1HØY	■ ? [2/2]: 8C KUH				
<u>WED 1</u>										
<u>WED 2</u>						□				
WED 3						1 2/2 J: 9A KUH				
WED 4										
WED 5						_ □ ? [2/2]: 98 KUH				
WED 6										
		0A # CKEV		# CKEVLAN						
		9A # SKEV		# SKEV LAN						
		96 # TV 1		# TV 1 WEL	# TV 11AN					
THU 6		9A # TV 1		# TV 1 WEI	#TV 1LAN					
FBL1		94 # TV 1		#TV_1WEL	#TV 1LAN					
FBI 2	84 TV 1			TV 1 HØY	TV 1 BBY					
FRI 3	8A KUH	8A KUH	8A KUH	KUH TEI	KUH LAN					
FRI 4	8A KUH	8A KUH	8A KUH	KUH TEI	KUH LAN					
FRI 5										
FRI 6										
•					Þ					
SELECT 8	A LAN TEGN	KUH CA	T: 3							

That figure is the point of this exercise: In the current case I have selected all activities using the Craft rooms: VERK and TEGN. I am now in a position to "hand knit" those two rooms in whatever way I want. THE OUTLINED PROCESS MAKES WHAT WE EARLIER CALLED "OLD COMPRESSED TABLE" WHERE YOU COUL MANUALLY ENTER NEW ASSIGNMENTS AND BLOCKINGS, COMPLETELY REDUNDANT SINCE IT NOW CAN BE EASILY DONE BY A SET OF P1- OPERATIONS. To complete the picture you may notice there is some manually created blockings (B*) in the above figure. This is performed by right clicking on some cell and either use Shift + F2 (= B*) or Shift+ F7 (=b*) or you may use these function keys directly on this cell. In short we lack nothing which "Old Compressed" could do.

For the past 10 years I have been the warmest defender of techniques like "Old Compressed" since I preferred simple and fast adjustment processes and not all the slowness from so called Windows operations in earlier versions of Tplan. I now wave a light-hearted good bye to my dear old friend: "Old Compressed". I find it rather ironical when writing about the techniques in this paragraph: Here I have devoted all my life to find a complex logical solution of a timetable, and the very last thing I end up with is demonstrating a cute way of doing things manually. (Well I see the need for that in some cases.)

I will give some concluding remarks about the work with P4, P1 and P2.

For an operation with P1 and P2 to prove useful, you must nearly always make some compromise. If you only select some apparently available position, you may safely assume that Tplan is perfectly aware of that, and Tplan has its reasons for not using that position. One postpones or shifts the problem to some other activity, perhaps making the problem more complex by choosing such a position. (I do it regardless sometimes). The most common compromises in a conflict situation are:

- 1. Modify the period requirement for a subject (most usual)
- 2. Use undesirable rooms.
- 3. Ignore teacher blockings or other requirements to the timetable.

Tplan could of course do such things automatically, **however it is completely against my basic philosophy that Tplan shall do compromises on its own.**

I come from a time where the manual adjustments were done with paper, pencil and rubber. It could lead to enormous interchange chains to assign a kickout (I remember cases with 30 -50 steps). These days are now history due to the following:

- The various selections you can do using P4, gives a dramatically improved survey compared with the techniques of yester. The forthcoming adjustment work is much simpler and easier to survey; in particular use KtempGrid rather than KomprGrid if you choose the correct selections.
- The current level of the algorithmic foundation of Tplan has been improved to an extent where it is a question of marginal returns. Nobody is able to make a timetable considerably better than Tplan.
- The typical adjustment work will be frequent use of P1 where the number of steps is very small. P2 will also be used.
- Now if a number of operations with P1 and P2 lead to a gradually increasing chaos, it is high time to forget what you have done till now. Go back to the start and concentrate about:
 - a. Try to make better steering directives. Try a number of complete runs, simply to get a better survey of the complexity in the timetable.
 - b. Inspect carefully the logical analysis. Is the problem stated too ambitiously?

- c. If you don't see a solution through point 1 and 2, you will have to revaluate the basis for your desired school structure.
- Believe me, it goes much easier to forget the chaos you have created and start with blank pages and learn from the experiences you have made.

6.3 Examples of adjusting timetables using drag/drop – techniques

The previous chapter showed the principles for using drag/drop in Tplan. Many examples were rather artificial from a timetabling point of view. Here we will show more realistic examples. This presentation has some practical problems: We need a lot of figures to show everything and the A4-format is too small for complete screen dumps. I limit the no. of figures and work mainly with a selection (KtempGrid) or a part of a selection. I assume most is interested in learning the basics of drag/drop, while none is interested in the complete solution of the examples I am showing. I will do a lot of shortcuts here and there while I shall try to pinpoint what might be general in various operations. I could have wished to use more Danish examples and perhaps even a more varied set of school structures. But I have to adapt to A4 and Danish schools usually have a large time frame or they are just too simple for my examples.

TP 1- Tpla	🔭 1- Tplan - dokka [791] [Registreret version]									
<u>Filer</u> Ree	digér Forn	na <u>t</u> er F <u>u</u> nk	ctioner K <u>o</u> r	ntrol <u>K</u> øre	<u>V</u> edligeh	old Kom	primeret H	- <u>l</u> jælp		Π
Skole La	Skole Lærere Lærer gr. Klasser Lokaler Fag. Blokke Positioner Styring Kompr-Plan						Skema Tab	beller Udskrifter Diverse		
Plan	8A	88	lar:	9A	IaB	10A	108	100		
MAN 1	MUS	SAF	SAF	§ NAKH 1	ENG	§ PRO 6	\$ PRO 6	§ PRO 6	Vis udsparkede aktiviteter	4
MAN 2	NEM16	NEM16	NEM16	§ NAKH 2	KRL	§ PRO 1	§ PRO 1	§ PRO 1	🔲 Vis uplacerede aktiviteter 🛛 📝 🌠	
MAN 3	GYM	GYM	GYM	§ NAKH 3	SAF	§ PRO 2	§ PRO 2	§PRO 2	🔽 Vis slettede aktiviteter 🛛 🗙 🗙 🗙	
MAN 4	GYM	GYM	GYM	KBLT	NOR	§ PRO 3	§ PRO 3	§ PRO 3	Vis parkerede aktiviteter	i II
MAN 5	§ NEM1 5	§ NEM1 5	\$ NEM1 5	NOR	MAT	§ PRO 4	§ PRO 4	§ PRO 4		. 1
MAN 6	§ NEM1 4	§ NEM14	§ NEM1 4	ENG	NM1	§ PRO 5	§ PRO 5	§ PRO 5		1
TIR 1	§ NEM 1	§ NEM 1	\$ NEM 1	NO	NO	* NEM 1	× NEM 1	× NEM 1		- 11
TIR 2	§ NEM 2	§ NEM 2	§ NEM 2	TV	TV	× NEM 2	× NEM 2	× NEM 2	MAN 01 👻 🖪 🗗 F2 S	- 11
TIR 3	NOR	NoM	MUS	TV	TV	× NEM 3	× NEM 3	* NEM 3		_
TIR 4	NoM	MUS	NOR	§ PRO 1	§ PRO 1	§ UTPL 1	§ UTPL 1	§ UTPL 1		
TIR 5	SAF	KLT	KRL	§ PRO 2	§ PRO 2	§ UTPL 1	§ UTPL 1	§ UTPL 1		
TIR 6	NEM 3	NEM 3	NEM 3	§ PRO 3	§ PRO 3	§ UTPL 3	§ UTPL 3	§ UTPL 3		
ONS 1	NEM 6	NEM 6	NEM 6	KBL	NOR	§ NAKH 1	MUS	SAF		
ONS 2	KLT	MAT	NoM	MAT	НК	§ NAKH 2	SAF	NM1		
ONS 3	KBL	NOR	MAT	ENG	НК	§ NAKH 3	KRL	MUS		
ONS 4	TV	TV	TV	MUS	НК	× NEM 6	× NEM 6	× NEM 6		
ONS 5	§ NEM 5	§ NEM 5	§ NEM 5	GYM	GYM	× NEM 4	× NEM 4	× NEM 4		
ONS 6	§ NEM 4	§ NEM 4	§ NEM 4	GYM	GYM	× NEM 5	× NEM 5	× NEM 5		
TOR 1	§ PRO 1	§ PRO 1	§ PRO 1	TV1	TV1	SAF	SAF	§ NAKH 1		
TOR 2	§ PRO 2	§ PRO 2	§ PRO 2	NOR	MAT	KRL	NM1	§ NAKH 2		
TOR 3	§PRO 3	§ PRO 3	§PRO 3	MAT	ENG	NM1	KLT	§ NAKH 3		
TOR 4	SPRO 4	SPRO 4	§PRO 4	SAF	§ NAKH 3	TYNO	TYNO	TYNO		
TOR 5	SPRO 5	§ PRO 5	SPRO 5	NM1	§ NAKH 2	GYM	GYM	GYM		
10R 6	S PRO 6	S PHU 6	S PRU 6	ENG	S NAKH 1	GYM	GYM	GYM		
FRE 1	SAF	KRL		HK	NOR	SAF	§ NAKH 1	KRL		
FRE 2	MAT	SAF	SAF	HK	ENG	KLT	§ NAKH 2	KLT		
FRE 3	NEM13	NEM13	NEM13	HK	MAT	MUS	§ NAKH 3	SAF		
FRE 4	S NEM11	S NEMI 1	S NEM11	NUR	KHLT	* NEM12	* NEM12	* NEM12		
FRE 5	S NEMI 2	SINEMT 2	S NEMT 2	SAF	SAF	* NEMT1	* NEMI 1	* NEMT1		
FRE 6		11	14	IMA I	MUS	* NEMT3	* NEMT 3	* NEMT 3		
•								F		
MAIN PRO	OGRAM COM	MPLETED								

6.3.1 Example 1

This is small infernal complex school (Look at all large blocks, large sequentials and same day-req.) We have ended up with a single pure class kickout : 8C KLT. Select that act. in kickout list and then click on P4 button just above (Use Category: Pure class). You get this selection:

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🌇 1- Tplan - dokka [791] [Registreret version]									
<u>F</u> iler <u>R</u> edigér Forma <u>t</u> er F <u>u</u> nktioner K <u>o</u> ntrol <u>K</u> øre… <u>V</u> edligehold Komprimeret <u>H</u> jælp									
Skole L	.ærere Lære	ergr. Klasse	r Lokaler Fag	sitioner Styring Kompr-Udvalg Skema Tabeller Uc					
Udvalg	8C	EVE	SG	SL	Vis udsparkede aktiviteter				
MAN 1	SAF	8A MUS	8C SAF	8B SAF		i			
MAN 2	NEM16		8A NEM16						
MAN 3	GTM				Vis slettede aktiviteter	1			
MAN 5	\$ NEM1 5			8A \$ NEM1.5	Vis parkerede aktiviteter	2			
MAN 6	\$ NEM1 4	в.		8A § NEM1 4	Vis udvalgte aktiviteter 555				
TIB 1	S NEM 1			8A § NEM 1					
TIR 2	\$ NEM 2				Vælg pos 🔻 🔜 🖪 F2 S				
TIR 3	MUS	8C MUS	8B NoM	8A NOR					
TIB 4	NOR	8B MUS	8A NoM	8C NOR					
TIR 5	KRL		8C KRL	8B KLT					
<u>TIR 6</u>	NEM 3	в.	8A NEM 3	8A NEM 3					
ONS 1	NEM 6	10B MUS	8A NEM 6	8A NEM 6					
ONS 2	NoM		8C NoM						
ONS 3	MAT	10C MUS		8B NOR					
ONS 4	TV O UTUR F	9A MUS	SA TV						
UNS 5	S NEM 5	D*		SA S NEM 5					
	S NEM 4	D							
TOP 2	S PRU 1	B D*	8A § PHU I	8A § PHU 1					
TOB 3	\$ PBO 3	B.	84 \$ PBO 2	84 S PRO 2					
TOB 4	\$ PBO 4	B.	8A § PRO 4	8A \$ PBO 4					
TOR 5	\$ PRO 5	в.	8A § PRO 5	8A § PRO 5					
TOR 6	\$ PRO 6	в.	8A § PRO 6	8A § PRO 6					
FRE 1			8B KRL						
FRE 2	SAF		8C SAF	8B SAF					
FRE 3	NEM13	10A MUS	8A NEM13	8A NEM1 3					
FRE 4	\$ NEM11			8A § NEM11					
FRE 5	§ NEM1 2			8A § NEM1 2					
FRE 6	TY	9B MUS	8A TV						
•				+					
SELECT	8C SG 106	KLT CA	T: 4						

Actual teacher: SG is occupied in FRI 1 where 8C is available. Make the same selection again and use FRI 1 as actual position. You then get:

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TP 1- Tpla	🏆 1- Tplan - dokka [791] [Registreret version]									
<u>F</u> iler <u>R</u> edigér Forma <u>t</u> er F <u>u</u> nktioner K <u>o</u> ntrol <u>K</u> øre <u>V</u> edligehold Kom <u>p</u> rimeret <u>H</u> jælp										
Skole L	.ærere Lære	ergr. Klasse	r Lokaler I	Fag Blokki	e Positioner Styring Kompr-Udvalg	Skema Tabell 1				
Udvalg	8C	EVE	SG	SL	Vis udsparkede aktiviteter					
MAN 1	SAF	8A MUS	8C SAF	8B SAF		222				
MAN 2	NEM1 6		8A NEM16		Vis uplacerede aktiviteter					
MAN 3	GYM				Vis slettede aktiviteter					
MAN 5	\$ NEM15			8A S NEMI 5	🔲 Vis parkerede aktiviteter					
MAN 6	§ NEM1 4	в.		8A § NEM1 4	🔲 Vis udvalgte aktiviteter	555				
TIB 1	SINEM 1			8A S NEM 1						
TIR 2	\$ NEM 2				Vælg pos 🔻 🔚 🖪 F2	S				
TIR 3	MUS	8C MUS	8B NoM	8A NOR						
TIR 4	NOR	8B MUS	8A NoM	8C NOR	⊟ K) ● [1/1]: 8C KLT					
TIR 5	KRL		8C KRL	8B KLT	8C KLT SG 106					
<u>TIR 6</u>	NEM 3	в.	8A NEM 3	8A NEM 3						
<u>ONS 1</u>	NEM 6	10B MUS	8A NEM 6	8A NEM 6						
ONS 2	NoM		8C NoM							
ONS 3	MAT	10C MUS	OA TY	8B NOR						
ONS 5	S NEM 5	SA MUS	6A 11	20 S NEM 5						
ONS 6	S NEM 4	B.		on siden s						
TOB 1	\$ PBO 1	B"	8A \$ PBO 1	8A \$ PBO_1						
TOR 2	§ PRO 2	B.	8A § PRO	8A § PRO 2						
TOR 3	§PRO 3	в.	8A § PRO	8A § PRO 3						
TOR 4	§ PRO 4	в.	8A § PRO	8A § PRO 4						
TOR 5	§ PRO 5	в.	8A § PRO 3	5 8A § PRO 5						
TOR 6	§PRO 6	в.	8A § PRO	6 8A § PRO 6						
FRE 1			8B KRL							
FRE 2	SAF		8C SAF	8B SAF						
FRE 3	NEMI 3	IUA MUS	8A NEM13	8A NEM13						
FRE 5	S NEMI 1			84 S NEM1 1						
FBE 6	TV	9B MUS	SA TV							
		100								
				•						
SELECT	8C SG 106	KLT CA	T: 4 FRE 1			tt.				

From this figure we conclude that FRI 1 may be interchanged with TUE 3 or 4. We are not much helped by that since SG is also booked in TUE 3 and 4. Next attempt is to try to get SG available in FRI 1. Click on 8B KRL in FRI 1 in above figure and use P4 again (**NB this time you use P4-button in Main Bar since you are calling P4 from a Grid).** This time you get:

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TP 1- Tpl	🏆 1- Tplan - dokka [791] [Registreret version]									
<u>F</u> iler <u>R</u> edigér Forma <u>t</u> er F <u>u</u> nktioner K <u>o</u> ntrol <u>K</u> øre <u>V</u> edligehold Komprimeret <u>H</u> jælp										
Skole L	Lærere Lære	ergr. Klasse	r Lokaler Fag	sitioner Styring Kompr-Udvalg Skema Tabeller Uc						
Udvalg	8B	EVE	SG	SL	Vis udsparkede aktiviteter					
MAN 1	SAF	8A MUS	8C SAF	8B SAF	Vie uplacerede aktiviteter					
MAN 2	NEM1 6		8A NEM16							
MAN 3	GYM				Vis slettede aktiviteter					
MAN 5	S NEM15			84 8 NEM15	🔲 Vis parkerede aktiviteter 🛛 😐 🕑 🕑 🕑					
MAN 6	\$ NEM1 4	в.		8A § NEM14	🔲 Vis udvalgte aktiviteter 🛛 🚺 🕤 🕤					
TIB 1	\$ NEM 1			8A § NEM 1						
TIB 2	\$ NEM 2				Vælg pos 🔻 🔜 🖪 F2 S					
TIR 3	NoM	8C MUS	8B NoM	8A NOR						
TIR 4	MUS	8B MUS	8A NoM	8C NOR	⊡ K) ● [1/1]: 8C KLT					
TIR 5	KLT		8C KRL	8B KLT	8C KLT SG 106					
TIR 6	NEM 3	в.	8A NEM 3	8A NEM 3						
ONS 1	NEM 6	10B MUS	8A NEM 6	8A NEM 6						
ONS 2	MAT		8C NoM							
ONS 3	NOR	10C MUS		8B NOR						
ONS 4	TV	9A MUS	8A TV							
UNS 5	S NEM 5	D*		8A § NEM 5						
	3 NEM 4	B								
TOR 2	SPRU 1	в Р'	SASPRU I							
TOB 3	\$ PBO 3	B.	8A § PBO 3	8A § PBO 3						
TOR 4	§ PRO 4	в.	8A § PRO 4	8A § PRO 4						
TOR 5	§ PRO 5	в.	8A § PRO 5	8A § PRO 5						
TOR 6	§ PRO 6	B.	8A § PRO 6	8A § PRO 6						
FRE 1	KBL		8B KRL							
FRE 2	SAF		8C SAF	8B SAF						
FRE 3	NEM1 3	10A MUS	8A NEM13	8A NEM13						
FRE 4	§ NEM1 1			8A § NEM1 1						
FRE 5	§ NEM12		0.5 TH	8A § NEM1 2						
FRE 6	10	SB MUS	8A I V							
•				•						
SELECT	8B SG 105	KRL CA	T: 4 FRE 1							

The figure above tells that 8B KRL might be interchanged with TUE 3 or WED 3. As luck will have it SG is available in WED 3. **By all means select WED 3!!!** I.e. You drag 8B KRL (for teacher SG in FRI 1) to WED 3 and drop it here. You are told that this is an Ok interchange operation. You accept and end up with:

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🃭 1- Tplan - dokka [791] [Registreret version]												
<u>F</u> iler <u>R</u> edigér Forma <u>t</u> er F <u>u</u> nktioner K <u>o</u> ntrol <u>K</u> øre <u>V</u> edligehold Komprimeret <u>H</u> jælp												
Skole L	Skole Lærere Lærer gr. Klasser Lokaler Fag Blokke Positioner Styring Kompr-Udvalg Skema Tabe 💶 👘											
Udvalg	8C	EVE	SG	SL	Vis udsparkede aktiviteter							
MAN 1	SAF	8A MUS	8C SAF	8B SAF								
MAN 2	NEM16		8A NEM16									
MAN 4	GYM											
MAN 5	§ NEM1 5			8A § NEM1	Vis parkerede aktiviteter							
MAN 6	§ NEM1 4	в.		8A § NEM1	Vis udvalgte aktiviteter SSS							
TIR 1	§ NEM 1			8A § NEM 1								
TIR 2	§ NEM 2				Vælg pos 🔻 🔄 🖪 F2 S							
TIR 3	MUS	8C MUS	8B NoM	8A NOR								
TIR 4	NOR	8B MUS	8A NoM	8C NOR	⊟ • <mark>K) ● [1/1]: 8C KLT</mark>							
TIR 5	KRL		8C KRL	8B KLT	8C KLT SG 106							
<u>TIR 6</u>	NEM 3	в.	8A NEM 3	8A NEM 3								
ONS 1	NEM 6	10B MUS	8A NEM 6	8A NEM 6								
ONS 2	NoM		8C NoM									
UNS 3	MAI	10C MUS	8B KHL									
ONS 4	S NEM 5	SA MUS	8A IV									
	SNEM A	8.		OA STREPT								
TOP 1	S PPO 1	P.	24 S DDO 1	24 S PPO 1								
TOB 2	\$ PBO 2	B'	8A § PBO 2	8A S PBO 2								
TOR 3	\$ PRO 3	B.	8A § PRO 3	BASPRO 3								
TOR 4	§ PRO 4	в.	8A § PRO 4	8A § PRO								
TOR 5	§ PRO 5	в.	8A § PRO S	8A § PRO §								
TOR 6	§ PRO 6	B.	8A § PRO 6	8A § PRO 6								
FRE 1				8B NOR								
FRE 2	SAF		8C SAF	8B SAF								
FRE 3	NEM1 3	10A MUS	8A NEM13	8A NEM13								
FRE 4	§ NEM1 1			8A § NEM1								
FRE 5	§ NEM1 2			8A § NEM1								
FRE 6	TV	9B MUS	8A TV									
•				*								
SELECT	8C SG 106	KLT CA	T: 4									

You have a nice green colour in FRI 1 for both 8C and SG. A simple drag from kickout list and drop in FRI 1 completes the timetable. SIMPLE!

6.3.2 Example 2

This example is slightly artificial. (since Tplan on its own would never produce such a result). The starting table is like this:

Selection	10C	AUS	BIR	SAN	SAN	WEI	01	02	09	14	Display kicked out activities
MON 1 815 - 900	10C 🕅 NOMA 1	8B ENNA 3	10C NOMA 1	10C × NOMA 1		8C MA					V Display not laid activities
MON 2 910 - 955	10C 8 NOMA 2	8B SAF	10C 🖄 NOMA 2	10C X NOMA 2							Display erased activities
MON 31005 - 1050	10A # SKEV					10A # SKEV					Display crased activities
MON 4 1120 - 1205	10A # SKEV					10A # SKEV					Display parked activities
MON 51215-1300	10A # TV 1	10A # TV 1	8A NO 1								Display selected activities
MON 6 1310 - 1355	10A # TV 1	10A # TV 1	9B SAF								
TUE 1 815 - 900	10C 8 ENNA 1	10C X ENNA 1	98 KRL			10C X ENNA 1					Select pos 🔻 📃 🖪 F2
TUE 2 910 - 955	10C X NOMA 3	8B × ENNA 1	10C X NOMA 3	10C X NOMA 3							0 0 A 11/1 1 100 SAE
TUE 31005 - 1050	10C X ENNA 2	10C × ENNA 2	9B SAF			10C X ENNA 2					
TUE 4 1120 - 1205		8B 🛛 ENNA 2				8C X NOMA 3					
TUE 51215-1300	10C X NOMA 4	88 KRL	10C X NOMA 4	10C X NOMA 4		8C X NOMA 4					⊞ <u>r</u> [371]: 10C SAF
TUE 6 1310 - 1355	10A # TV 1	10A # TV 1									
WED 1 815 - 900	10C MA	10A × ENNA 2	9B SAF	10C MA		8C X NOMA 1					
WED 2 910 - 955	10C NO	10A × ENNA 1	10C NO								
WED 31005 - 1050	10C KOH										
WED 4 1120 - 1205	10C KOH	8B SAF		98 KRØ		8C X NOMA 2					
WED 51215-1300	10C EN	10C EN		98 KRØ		8C BIO					
WED 6 1310 - 1355	10C KRØ		10B SAF	10C KRØ		8C KLR					
THU 1 815 - 900	10C MUS	8B ENNA 3		B*		8C MA					
THU 2 910 - 955	10C NAT	8B SAF	10B SAF	B*		10C NAT					
THU 3 1005 - 1050				9A # SKEV	B*						
THU 4 1120 - 1205		10A ENNA 3	8A NO 1	9A # SKEV	B*	8C BIO					
THU 51215-1300	10C NO	88 KRL	10C NO	B*		9A # TV 1					
THU 6 1310 - 1355	10C EN	10C EN		B*		94 # TV 1					

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We have kickouts of 3 periods of 10C SAF (pure class). We use P4 and get nice dark green colour in TUE 4 and THU 3. Two simple drag/drops from kickout list to these periods eliminate 2 kickouts. For the remaining kickout we use P4 with THU 4 as actual position. We get:

Selection	10C	AUS	BIR	BRE	LAN	SAN	SAN	TEI	WEI	ZZ	01
MON 1 815 - 900	10C 🖲 NOMA 1	8B ENNA 3	10C NOMA 1		98 KUH	10C NOMA 1		9B KUH	SC MA		
MON 2 910 - 955	10C 🛛 NOMA 2	8B SAF	10C × NOMA 2		98 KUH	10C 🗏 NOMA 2		98 KUH			
MON 31005 - 1050	10A # SKEV			8B MUS				10A # SKEV	10A # SKEV		
MON 4 1120 - 1205	10A # SKEV							10A # SKEV	10A # SKEV		
MON 51215-1300	10A # TV 1	10A # TV 1	8A NO 1					10A # TV - 1			
MON 6 1310 - 1355	10A # TV 1	10A # TV 1	9B SAF	8C MUS				10A # TV 1			
TUE 1 815 - 900	10C × ENNA 1	10C × ENNA 1	98 KRL						10C × ENNA 1		
TUE 2 910 - 955	10C 🖄 NOMA 3	8B 🛛 ENNA 1	10C × NOMA 3		SC KUH	10C × NOMA 3		8C KUH			
TUE 3 1005 - 1050	10C 8 ENNA 2	10C × ENNA 2	9B SAF		8C KUH			8C KUH	10C × ENNA 2		
TUE 4 1120 - 1205	10C SAF	8B 🛛 ENNA 2	10C SAF	8A MUS	9A KUH			9A KUH	8C × NOMA 3		
TUE 51215-1300	10C 🛛 NOMA 4	8B KRL	10C × NOMA 4	9C MUS	9A KUH	10C × NOMA 4		<u>9A KUH</u>	8C × NOMA 4	<u> </u>	
TUE 6 1310 - 1355	10A # TV 1	10A # TV 1		9A MUS				10A # TV 1			
WED 1 815 - 900	10C MA	10A × ENNA 2	9B SAF		9C KUH	10C MA		9C KUH	8C X NOMA 1		
WED 2 910 - 955	10C NO	10A × ENNA 1	10C NO	9B MUS	9C KUH			9C KUH			
WED 31005 - 1050	10C KOH				10C KOH			10C KOH			
WED 4 1120 - 1205	10C KOH	8B SAF			10C KOH	98 KRØ		10C KOH	8C × NOMA 2		
WED 51215-1300	10C EN	10C EN			88 KUH	98 KRØ		8B KUH	8C BIO		
WED 6 1310 - 1355	10C KRØ		10B SAF		88 KUH	10C KRØ		88 KUH	8C KLR		
THU 1 815 · 900	10C MUS	8B ENNA 3		10C MUS	10A KOH	B*		10A KOH	8C MA	10C MUS	Γ
THU 2 910 - 955	10C NAT	8B SAF	10B SAF		10A KOH	B*		10A KOH	10C NAT		
THU 3 1005 - 1050	10C SAF		10C SAF		9A # SKEV	9A # SKEV	B*				
THU 4 1120 - 1205		10A ENNA 3	8A NO 1	10B MUS	9A # SKEV	9A # SKEV	B*		8C BIO	10B MUS	
THU 51215-1300	10C NO	88 KRL	10C NO		9A # TV 1	B*			9A # TV 1		
THU 6 1310 - 1355	10C EN	10C EN			9A # TV 1	B*			9A # TV 1		
FRI 1 815 - 900	10C KRØ		10B SAF		9A # TV 1	10C KRØ			9A # TV 1		
FRI 2 910 - 955	10C KRØ	8B SAF	8A NO 1		10B KOH	10C KRØ		10B KOH	8C × ENNA 2		
FRI 3 1005 - 1050	10C MA			10A MUS	10B KOH	10C MA		10B KOH		10A MUS	
FRI 4 1120 - 1205	10C NO	10A ENNA 3	10C NO		8A KUH			8A KUH			
FRI 51215-1300	10C KRL		10C KRL		8A KUH	9C KRØ		8A KUH	8C × ENNA 1		
FRI 6 1310 - 1355	10C NAT					9C KRØ			10C NAT		

There is currently no possibility of making BIR available in THU 4. Next attempt is to try to get BIR available in this period. Click on BIR in THU 4 and make a P4 (**Again: Main bar here**). We get this result:

Selection	8A	BIR	BRE	LEN	KLU	LAN	NØR	SOL	TEI
MON 1 815 - 900	8A SAF	10C NOMA 1		8A SAF	8A SAF	9B KUH		10A KRØ	9B KUH
MON 2 910 - 955	8A MA	10C R NOMA 2				9B KUH	8A MA		9B KUH
MON 31005 - 1050	8A KRØ		8B MUS				8A KRØ	8A KRØ	10A # SKEV
MON 4 1120 - 1205	8A KRØ				9A NOMA 3		8A KRØ	8A KRØ	10A # SKEV
MON 51215-1300	8A NO 1	8A NO 1		8A NO 1				8B KRØ	10A # TV 1
MON 6 1310 - 1355	8A KRL	9B SAF	8C MUS	8A KRL	9B SAF			8B KRØ	10A # TV 1
TUE 1 815 · 900	8A TV 1	98 KRL		8A TV 1	98 KRL			10A NAT	
TUE 2 910 - 955	8A X NOMA 1	10C NOMA 3		8A × NOMA 1		8C KUH	8A × NOMA 1		8C KUH
TUE 3 1005 - 1050	8A ¤ NOMA 2	9B SAF		8A [×] NOMA 2	9B SAF	8C KUH	8A X NOMA 2		8C KUH
TUE 4 1120 - 1205	8A MUS	10C SAF	8A MUS	9C NAEN 3	9B § HKNM 1	9A KUH		10A NOMA 5	9A KUH
TUE 51215-1300	8A ¤ ENNA 1	10C NOMA 4	9C MUS	8A ¤ ENNA 1	9B § HKNM 1	9A KUH	8A × ENNA 1	10A SAF 3	9A KUH
TUE 6 1310 - 1355	8A × ENNA 2		9A MUS	8A × ENNA 2			8A 8 ENNA 2		10A # TV 1
WED 1 815 - 900	8A × NOMA 3	9B SAF		8A × NOMA 3	9B SAF	9C KUH	8A × NOMA 3	10A # ENNA 2	9C KUH
WED 2 910 - 955	8A X NOMA 4	10C N0	9B MUS	8A × NOMA 4		9C KUH	8A X NOMA 4	10A × ENNA 1	9C KUH
WED 3 1005 - 1050	8A BIO			9C NAEN 3		10C KOH	8A BIO	10A × NOMA 1	10C KOH
WED 4 1120 - 1205	8A SAF			8A SAF	8A SAF	10C KOH		10A KRØ	10C KOH
WED 51215-1300	8A KRL			8A KRL		8B KUH		10A KRØ	8B KUH
WED 6 1310 - 1355	8A EN	10B SAF		8A EN		8B KUH	10C KRØ	10A × NOMA 2	8B KUH
THU 1 815 - 900	8A MA		10C MUS		9A 8 NOMA 1	10A KOH	8A MA		10A KOH
THU 2 910 · 955	8A EN	10B SAF		8A EN	9A × NOMA 2	10A KOH			10A KOH
THU 3 1005 - 1050	8A SAF	10C SAF		8A SAF	8A SAF	9A # SKEV		10A NOMA.5	
THU 4 1120 · 1205	84 NO 1	8A NO 1	10B MUS	8A NO 1		9A # SKEV			
THU 51215-1300	8A BIO	10C N0				9A # TV 1	8A BIO		
THU 6 1310 - 1355	8A KLR					9A # TV 1	8A KLR	10A SAF 1	
FBL1 815 - 900	8A SAF	10B_SAF		8A SAF	8A SAF	94.#TV_1	10C KBØ	10A × NOMA 3	
FBI 2 910 - 955	8A NO 1	84 NO 1		8A NO 1		108 KOH	10C KRØ	10A × NOMA 4	10B KOH
FBI 3 1005 - 1050	8A KBØ1		10A MUS	9C X NAEN 1		108 KOH	8A KBØ1	8A KBØ1	10B KOH
FRI 4 1120 - 1205	8A KUH	10C N0		9C ^M NAEN 2		8A KUH		88 KRØ1	8A KUH
FRI 51215 - 1300	8A KUH	10C KRL			9B § HKNM 4	8A KUH	9A KRØ	10A SAF 1	8A KUH
FRI 6 1310 - 1355	8A TV 1			8A TV 1	9B § HKNM 4		9A KRØ	10A NAT	
SELECT 8A BIR ##	11 NO 1 CAT	F: 5 THU 4							

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From this figure we see THU 1 may be interchanged with THU 4 and BIR is **currently available in THU 1.** We do this drag/drop and get this message:



We accept that. Then we drag the last 10C SAF from kickout list to THU 4 and end up with: PROBLEM SOLVED

Selection	8A	BIR	BRE	LEN	KLU	LAN	NØR	SOL	TEI
MON 1 815 - 900	8A SAF	10C × NOMA 1		8A SAF	8A SAF	9B KUH		10A KRØ	98 KUH
MON 2 910 - 955	8A MA	10C × NOMA 2				9B KUH	8A MA		9B KUH
MON 31005 - 1050	8A KRØ		88 MUS				8A KRØ	8A KRØ	10A # SKEV
MON 4 1120 - 1205	8A KRØ				9A NOMA 3		8A KRØ	8A KRØ	10A # SKEV
MON 51215-1300	8A NO 1	8A NO 1		8A NO 1				88 KRØ	10A # TV 1
MON 6 1310 - 1355	8A KRL	9B SAF	8C MUS	8A KRL	9B SAF			88 KRØ	10A # TV 1
TUE 1 815 - 900	8A TV 1	98 KRL		8A TV 1	98 KRL			10A NAT	
TUE 2 910 - 955	8A × NOMA 1	10C × NOMA 3		8A × NOMA 1		8C KUH	8A 🛛 NOMA 1		8C KUH
TUE 3 1005 - 1050	8A 🖄 NOMA 2	9B SAF		8A × NOMA 2	9B SAF	8C KUH	8A 🛛 NOMA 2		8C KUH
TUE 4 1120 1205	8A MUS	10C SAF	8A MUS	9C NAEN 3	98 § HKNM 1	9A KUH		10A NOMA 5	9A KUH
TUE 51215-1300	8A 🛛 ENNA 1	10C × NOMA 4	9C MUS	8A × ENNA 1	98 § HKNM 1	9A KUH	8A × ENNA 1	10A SAF 3	SA KUH
TUE 6 1310 - 1355	8A 🛛 ENNA 2		9A MUS	8A X ENNA 2			8A 🛛 ENNA 2		10A # TV 1
WED 1 815 - 900	8A 🖄 NOMA 3	9B SAF		8A X NOMA 3	9B SAF	9C KUH	8A 🛛 NOMA 3	10A # ENNA 2	9C KUH
WED 2 910 - 955	8A 🛎 NOMA 4	10C NO	9B MUS	8A × NOMA 4		9C KUH	8A 🛛 NOMA 4	10A X ENNA 1	9C KUH
WED 3 1005 - 1050	8A BIO			9C NAEN 3		TOC KOH	8A BIO	T0A ^H NOMA T	TOC KOH
WED 4 1120 - 1205	8A SAF			8A SAF	8A SAF	10C KOH		10A KRØ	10C KOH
WED 5 1215 - 1300	8A KRL			8A KRL		88 KUH		10A KRØ	8B KUH
WED 6 1310 - 1355	8A EN	10B SAF		8A EN		88 KUH	10C KRØ	10A × NOMA 2	88 KUH
THU 1 815 - 900	8A NO 1	8A NO 1	10C MUS	8A NO 1	9A ≊ NOMA 1	10A KOH			10A KOH
THU 2 910 - 955	8A EN	10B SAF		8A EN	9A × NOMA 2	10A KOH			10A KOH
THU 3 1005 - 1050	8A SAF	10C SAF		8A SAF	8A SAF	9A # SKEV		10A NOMA 5	
THU 4 1120 - 1205	8A MA	10C SAF	10B MUS			9A # SKEV	8A MA		
THU 5 1215 - 1300	8A BIO	10C NO				9A # TV 1	8A BIO		
THU 6 1310 - 1355	8A KLR					9A # TV 1	8A KLR	10A SAF 1	
FRI 1 815 - 900	8A SAF	10B SAF		8A SAF	8A SAF	9A # TV 1	10C KRØ	10A × NOMA 3	
FRI 2 910 - 955	8A NO 1	8A NO 1		8A NO 1		108 KOH	10C KRØ	10A × NOMA 4	10B KOH
FRI 31005 - 1050	8A KRØ1		10A MUS	9C [×] NAEN 1		10B KOH	8A KRØ1	8A KRØ1	10B KOH
FRI 4 1120 - 1205	8A KUH	10C NO		9C [×] NAEN 2		8A KUH		88 KRØ1	8A KUH
FRI 5 1215 1300	8A KUH	10C KRL			9B § HKNM 4	8A KUH	9A KRØ	10A SAF 1	8A KUH
FRI 6 1310 - 1355	8A TV 1			8A TV 1	9B § HKNM 4		9A KRØ	10A NAT	

6.3.3 Example 3

This is the same school as example 1, but the starting point is slightly more complicated:

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Тр 1- Тр	🖫 1- Tplan - dokka [790] [Registered version]											
<u>Files</u>	<u>Files E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp											
School	Teachers	Teacher	pools Class	es Rooms	Subjects	Blocks P	eriods Ste	ering Comp	pressed Table Full Text Tables Listings Various			
Table	8A	8B	8C	9A	9B	10A	10B	10C	Display kicked out activities			
MON1	NEM16	NEM16	NEM16	§NAKH1	MUS	§PRO 6	§PRO 6	§PRO 6				
MON 2	KLT	MAT	SAF	§NAKH 2	NM1	§PRO 1	§PRO 1	§PRO 1	Uispiay not laid activities			
MON 3	GYM	GYM	GYM	§NAKH 3	SAF	§PRO 2	§PRO 2	§PRO 2	🔲 Display erased activities 🛛 📉 📉 📉			
MON 4	GYM	GYM	GYM	MAT	ENG	§PR0 3	§PR0 3	§PR0 3	Display parked activities			
MON 5	§ NEM15	§ NEM15	SINEM15	IW	TWE	SPRO 4	SPRO 4	SPRO 4	Display special activities			
MON 6	SINEMIT4	SINEM14	SINEMIT4	NO	NUR	SPRU 5	SPRU 5	SPRU 5				
TUE 1	§ NEM 1	§ NEM 1	§ NEM 1	ENG	нк	× NEM 1	× NEM 1	× NEM 1				
TUE 2	§ NEM 2	§ NEM 2	§ NEM 2	MAT	HK	* NEM 2	* NEM 2	× NEM 2	Select pos 🔻 🔜 🖪 🗗 🔁 5			
TUE 3	TV	TV	TV	NUR	HK	A NEM 3	A NEM 3	A NEM 3				
TUE 4	SAF	SAF	NOM	SAF	MAT	SUIPL1	SUIPLI	SUIPL1				
	KHL	MUS	KBL	GYM	GYM	SUIPL1	SUIPLI	SUIPL1	. ⊕ K) [1/1]: 9B KRL			
	INEIVE3	INEIVI 3	INEIVE3	GYIM	GYIM	§UIPL3	SUIPL3	SUIPL3	⊞- R > [1/1]: 9A SAF			
VED1	NEM 6	NEM 6	NEM 6	ENG	SAF	§NAKH1	KRL	SAF				
VED 2	MAT	NOR	MAT	KRL	NOR	§NAKH 2	NM1	MUS				
WED 3	MUS	NoM	NUR	17	11	§ NAKH 3	SAF	NM1				
		KHL	MUS	IV DAAT	10	A NEMI 6	A NEM 6	A NEM 6				
WED 5	SINEIVI O	SINEIVI O	SINEIVI D	MAT	1.4.4.T	A NEWLA	A NEIVI 4	A NEW 4				
WEDB	SINEIVE4	SINEIVI 4	SINEIVI 4	NUR	IMAT	O INEIVED	CIVEIVI D	≏ INEIVES				
	§PRU 1	SPRU 1	SPRU 1	HK	ENG	SAF	§NAKH1	KHL				
	SPRU Z	SPRU Z	SPRU 2	HK	NUR KDLT	KHL	S NAKH 2	KLT CAT				
	SPRU 3	SPRU 3	SPRU 3	HK KOLT	KRET S MAKED	TYNO	S NAKH 3	SAF				
	8 PPO 6	SPRU 4	8 PPO 6		S NAKH 3	CYM	CYM -	GYM -				
THUS	8 PBO 6	SPB0.6	SPBO 6	ENG	S NAKH2	GYM	GYM	GVM				
EDU	OAE	CAE	CAE	2 000 1	2000.1	CAE	MUC	S MAKEN				
	NoM	ULT.	OME	8 PPO 2	2 PPO 2		CAE	S NAKH I				
	NEM12	NET 1	NICE 41.2	2 PPO 2	8 PPO 2	MUS		S NAKH2				
FRIA	8 NEM13	8 NEM11	S NEM14	NOR	MAT .	X NEM12	X NEM12	X NEM12				
EBI5	SINCHIT	S NEM12	S NEM12	MUS	ENG	× NEM11	× NEM11	× NEM11				
EBI6	TV	TV	TV	1100	NO	× MEM13	× NEM13	× NEM13				
						Tacivito	Tacinito	Taciento				
								•				
MAIN P	ROGRAM	COMPLET	ED ITER/	ATIVE								

This time we have 3 kickouts of pure class singles. I **prefer always to start with the most complicated problem** but in my presentation here I start with the simplest problem. I start with 9A SAF and use P4 to get this selection:
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🏆 1- Tplan - dokka [790] [Registered version]									
<u>F</u> iles <u>E</u> d	it Form <u>a</u> t	s F <u>u</u> nctio	ons C <u>o</u> ntrol	<u>R</u> un <u>M</u> aint	enance Com <u>p</u> ressed <u>H</u> elp				
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection									
Selection	9A	EVE	LH	SR	Display kicked out activities				
MON1	§NAKH1	9B MUS	9A § NAKH 1		Display not laid activities				
MON 2	§NAKH 2		9B-NM1	8A KLT	Uisplay not laid activities				
MON 3	§NAKH 3		9A § NAKH 3		🔲 Display erased activities 🛛 📉 📉 📉				
MON 4	MAT		SA MAT		Display parked activities				
MON 5	101			SA TVI	Display special activities				
	NO	в.		3A NU					
	ENG		SA SINEM 1						
TUE 2	MAT		SA MAT		Select pos V				
	NUR			SA NUR					
	SAF GYM		3B IMAT	SA SAF					
	GYM	D.		SA GTM	⊕ <mark>K) [1/1]: 9B KRL</mark>				
	GTM ENC	0		SA GINI	· ⊞ 🚯 ● [1/1]: 9A SAF				
	ENG	IOC MALE	SA INEIVI 6						
	TV		OC MAT	SA NEL					
WED 3	TV	SC MUS		96 TV					
WED 5	MAT	00 1100	94 MAT						
VED 6	NOB	в.	9B MAT	SA NOB					
	нк	B.		10B S NAKH 1					
THU2	нк	B.		10B § NAKH 2					
THUS	НК	B.	9B KRLT						
THU 4	KRLT	в.	9B § NAKH 3	9A KRLT					
THU 5	NM1	в.	9A NM1	9B § NAKH 2					
THU 6	ENG	В.	9B § NAKH 1	9B § NAKH 1					
FBI1	§ PRO 1	10B MUS	9A § PRO 1	9A § PRO 1					
FBI2	§PRO 2		9A § PRO 2	9A § PRO 2					
FRI3	§PRO 3	10A MUS	9A § PRO 3	9A § PRO 3					
FBI4	NOR		9B MAT	9A NOR					
FRI5	MUS	9A MUS	8A § NEM12						
FRI6									
•				۱.					
SELECT	9A SR 208	SAF C	AT: 4						

This case is simple: 9A SAF may directly be assigned to FRI 6, but you are then breaking a day conflict. Looks peculiar, but investigating the block in 3 first periods on FRI includes a single per SAF. This is a minor compromise. We drag 9A SAF from kickout list to FRI 6 and drop it. Everything is ok. Next case is:

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Files Edit Formats Functions Control Run Maintenance Compressed Help School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection (*) School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection (*) MON1 Netmin 98 Netmin 90 Display kicked out activities (*) (*) MON12 SAF 90 SAF (*) Display parked activities (*) <th>TP 1- Tpla</th> <th colspan="9">🏆 1- Tplan - dokka [790] [Registered version]</th>	TP 1- Tpla	🏆 1- Tplan - dokka [790] [Registered version]								
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection Image: Selection School 1 NEM16 SE Selection Selection <td><u>F</u>iles <u>E</u>d</td> <td>it Form<u>a</u></td> <td>ts F<u>u</u>nctio</td> <td>ons C<u>o</u>ntro</td> <td>l <u>R</u>un <u>M</u>air</td> <td>ntenance Com<u>p</u>ressed <u>H</u>elp</td>	<u>F</u> iles <u>E</u> d	it Form <u>a</u>	ts F <u>u</u> nctio	ons C <u>o</u> ntro	l <u>R</u> un <u>M</u> air	ntenance Com <u>p</u> ressed <u>H</u> elp				
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection Image:										
Selection 8C EVE SG SL MON1 NEM16 9B MUS 9A NEM16 Display kicked out activities P??? MON2 SAF 9C SAF Display not laid activities Pisplay not laid activities Pisplay not laid activities MON4 GYM GYM Display parked activities Display parked activities Pisplay special activities MON5 SNEM14 B* 0A \$NEM14 Display special activities Pisplay special activities TUE 1 SNEM14 B* 0A \$NEM14 Display special activities Pisplay special activities TUE 2 SNEM14 B* 0A \$NEM14 B* Display special activities TUE 3 NEM 1 0A \$NEM13 BA NEM 1 B* Select posities TUE 4 Nom 8C Nom 8B NOR B* SC KLT SG 106 VED 1 NEM 6 BA NEM 3 BA NEM 5 B* SC KLT SG 106 VED 4 MUS B* BA SPR0 7 SA \$PR0 2 S MED 3 NOR BA AND BA SPR0 7 SA \$PR0 2 MU1 3 SPR0 3	School 1	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection 💶 🛌								
1UE 2 SNEM 2 TUE 3 TV 1UE 3 TV 1UE 4 NoM 3 C NoM 38 SAF TUE 6 NEM 3 8 NEM 3 9 8A NEM 6 9 9	MON1 MON2 MON3 MON4 MON5 MON6 TUE1	NEM16 SAF GYM § NEM15 § NEM14 § NEM 1	9B MUS	8A NEM16 8C SAF	8A § NEM15 8A § NEM14 8A § NEM 1	Display not laid activities Display erased activities Display parked activities Display special activities				
WED2 MAT 10C MUS 88 NOR WED3 NOR 8A MUS 8B NoM 8C NOR WED4 MUS 8C MUS 8B KRL 8A NOR WED5 \$NEM 5 BA & NOR 8A & NOR WED6 \$NEM 4 B' 8A & NEM 5 WED6 \$NEM 4 B' B' THU1 \$PR01 B' 8A & PR02 THU2 \$PR02 B' 8A & PR02 THU3 \$PR03 B' 8A & PR03 THU4 \$PR04 B' 8A & PR05 THU5 \$PR05 B' 8A & PR05 THU6 \$PR06 B' 8A & PR06 FR11 SAF 108 MUS 8C SAF FR12 8A NOM 8B KLT FR13 NEM13 10A MUS 8A NEM13 FR16 TV 8A YV	TUE 2 TUE 3 TUE 4 TUE 5 TUE 6 WED 1	§ NEM 2 TV NoM KRL NEM 3 NEM 6	8B MUS B'	8A TV 8C NoM 8C KRL 8A NEM 3 8A NEM 6	8B SAF 8A NEM 3 8A NEM 6	Select pos Imile F2 S				
THU1 § PR01 B* 8A § PR01 8A § PR01 THU2 § PR02 B* 8A § PR02 9A § PR02 THU3 § PR03 B* 8A § PR03 8A § PR03 THU4 § PR04 B* 8A § PR04 8A § PR04 THU5 § PR05 B* 8A § PR05 8A § PR05 THU6 § PR06 B* 8A § PR06 8A § PR06 FR11 SAF 108 MUS 8C SAF 8B SAF FR12 SA NoM SE KLT 8A § NEM13 FR13 NEM13 10A MUS 8A § NEM113 FR14 § NEM12 9A MUS 8A § NEM12 FR16 TV 8A TV N	VED 2 VED 3 VED 4 VED 5 VED 6	MAT NOR MUS § NEM 5 § NEM 4	10C MUS 8A MUS 8C MUS B	8B NoM 8B KRL	88 NOR 80 NOR 84 NOR 84 § NEM 5					
FRI SAF 10B MUS 8C SAF 8B SAF FRI2 8A NoM 8E KLT FRI3 NEM13 10A MUS 8A NeM13 FRI4 \$NEM11 8A \$NEM11 FRI5 \$NEM12 9A MUS FRI6 TV 8A TV	THU1 THU2 THU3 THU4 THU5 THU6	§PRO 1 §PRO 2 §PRO 3 §PRO 4 §PRO 5 §PRO 6	B' B' B' B'	8A § PRO 1 8A § PRO 2 8A § PRO 3 8A § PRO 4 8A § PRO 5 8A § PRO 6	8A § PRO 1 8A § PRO 2 8A § PRO 3 8A § PRO 4 8A § PRO 5 8A § PRO 6					
	FRI1 FRI2 FRI3 FRI4 FRI5 FRI6	SAF NEM13 § NEM11 § NEM12 TV	10B MUS 10A MUS 9A MUS	8A NoM 8A NoM 8A NEM13 8A TV	88 SAF 88 KLT 8A NEM13 8A § NEM11 8A § NEM12					
SELECT &C SG 106 KLT CAT A EPL2	<	9C SG 10	5 1/17 (٢					

We work with 8C KLT (teacher SG) and uses FRI 2 as actual pos. We see that we may interchange FRI 2 with WED 4. We are not much helped by that since SG is booked in WED 4. Our next attempt is to try to free SG in FRI 2. We select 8A NoM in FRI 2 and get this:

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TP 1- Tpl	🖫 1- Tplan - dokka [790] [Registered version]								
<u>Files</u>	dit Form <u>a</u> t	s F <u>u</u> nctio	ons C <u>o</u> ntro	l <u>R</u> un <u>M</u> a	intenance (Compressed	<u>H</u> elp		
	n <mark>e e</mark>	OB	V B.		निनिति				-i
School	Teachers T	eacher poo	ls Classes	Rooms Subje	ects Blocks	Periods Steel	ring Compresse	ed Selection Full Text Tables Listings Various	
Selection	8A	EVE	SG	SL	ST	SR	VI	Display kicked out activities	<u>,</u>
MON1	NEM16	9B MUS	SA NEM16		SA NEM16			Display Nekee dak dek vikes 222	i
MON 2	KLT		8C SAF		8B MAT	8A KLT		Display not laid activities	
MON 3	GYM							Display erased activities	
MON 5	© NEM15			8A S NEM15	8A S NEM15	9A TV1	8A S NEM15	Display parked activities	
MON 6	§ NEM14	в.		8A § NEM14	8A § NEM14	9A NO	SA S NEM14	🔲 Display special activities 🛛 🔂 🔂 🔂	
TUE 1	§NEM 1			8A § NEM 1			8A § NEM 1		-
TUE 2	§ NEM 2				8A § NEM 2		10A * NEM 2	Select pos 🔻 🔚 🖪 F2 S	
TUE 3	TV		8A TV		XXX PLAN	9A NOR	10A * NEM 3		
TUE 4	SAF		8C NoM	8B SAF	8A SAF	9A SAF		🕀 🐨 🔣 🗢 🚺 1/1]: 8C KLT	
TUE 5	KBL	8B_MUS	SC KRL			9A GYM	8A KRL	8C KLT SG 106	
TUE 6	NEM 3	в.	8A NEM 3	8A NEM 3	8A NEM 3	9A GYM	SA NEM 3		
VED1	NEM 6		SA NEM 6	8A NEM 6			8A NEM 6		
VED 2	MAT	10C MUS		8B NOR	8A MAT	9A KRL			
VED 3	MUS	8A MUS	8B NoM	SC NOR		SA TV			
	NUR SMEM 5	SC MUS	SB KRL	SA NUR	OA SNIEM E	SA TV	10A A NEMLE		
WED 6	S NEM 4	B.		ON STOENTS	SA SNEM 5		10.0 × NEM 5		
	S PPO 1	D.	24 S PPO 1	24 S PPO 1			PAS PRO 1		
THU2	SPB0 2	B.	8A SPB0 2	SASPBO 2	8ASPB0 2	10B § NAKH 2	8ASPB0 2		
THU 3	§PR0 3	в.	SASPRO 3	8A SPRO 3	8A S PRO 3	100 granter	8A § PRO 3		
THU 4	§PRO 4	в.	8A§PRO 4	8A§PRO 4	8A§PRO 4	9A KRLT	8A § PRO 4		
THU 5	§PRO 5	в.	8A § PRO 5	8A § PRO 5	8A § PRO 5	9B § NAKH 2	8A § PRO 5		
THU 6	§PRO 6	в.	8A§PRO 6	8A § PRO 6	8A§PRO 6	9B § NAKH 1	8A § PRO 6		
FBI1	SAF	10B MUS	SC SAF	8B SAF	8A SAF	9A § PRO 1			
FRI2	NoM		8A NoM	8B KLT		9A § PRO 2			
FRI 3	NEM13	10A MUS	8A NEM13	8A NEM13	8A NEM13	9A § PRO 3			
FBI4	SINEM11	0.1.1.100		SA § NEMI 1	SA § NEMI 1	SA NOR	10A * NEM1 2		
FRI5	SINEMI 2	SA MUS	20 TV	SA SINEMI 2	•	94 645	3A § NEM12 10A X NEM12		
			074 T V			SH SHE	To A Proceeding		
							•		
SELECT	8A SG 102	NoM	CAT: 4 FRI 2						

We see that FRI 2 may be interchanged with WED 2 and we accept this interchange and get this new situation:

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🏆 1- Tplan - dokka [790] [Registered version]								
<u>F</u> iles <u>E</u> d	it Form <u>a</u>	ts F <u>u</u> ncti	ons C <u>o</u> ntro	l <u>R</u> un <u>M</u> aii	ntenance Com <u>p</u> ressed <u>H</u> elp			
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection 🔹 🛌								
Selection	8C	EVE	SG	SL	Display kicked out activities			
MON1	NEM16	9B MUS	SA NEM16		Diselsung heide settinities			
MON 2	SAF		8C SAF		Uisplay not laid activities			
MON 3	GYM				📃 Display erased activities 🛛 📉 📉 📉			
MON 4	GYM				🔲 Display parked activities 🛛 😨 🗩 🗩			
MON 5	SINEM15		-	SA § NEM15	Display special activities			
	SINEMT4	В.		SA § NEMIT4				
	SINEM 1			SA § NEM 1				
TUE 2	§ NEM 2		0.0. TV		Select pos V			
	TV No.1		SA TV	00.045				
	INOM KDI		SC NOM	8B SAF				
	NEM 2	D*	SU KHL	OA NEM 2	8C KLT SG 106			
	NEM 3	в	OA NEMIS	OA NEMIS	. ⊞ K) [1/1]: 9B KRL			
	NEM 6	1000 1-4110	SA NEMI 6	SA NEM 6				
	MOR		SA NOM	8B NUR				
	MUC							
	S NEM 5	OC MUS		SA NON				
WED 6	SINEM 4	B.		ON STOLINES				
	2 DDO 1	P.		94 8 PPO 1				
THU2	SPB0 2	B.	SASPRO 2	84 S PBO 2				
THU3	SPB0 3	B'	8A \$ PB0.3	SASPBO 3				
THU 4	SPB0 4	В.	8A § PBO 4	8A § PBO 4				
THU 5	§PR0.5	в.	8A § PRO 5	8A § PRO 5				
THU 6	§PRO 6	в.	8A § PRO 6	SASPRO 6				
EBI1	SAF	10B MUS	8C SAF	8B SAF				
FBI2	9 . 11			8B KLT				
FBI3	NEM13	10A MUS	8A NEM13	8A NEM13				
FBI4	§ NEM11			8A § NEM11				
FRI5	§ NEM12	9A MUS		8A § NEM12				
FRI6	TV		8A TV					
•				۲				
SELECT	8C SG 10	6 KLT	CAT: 4					

We have a nice dark green colour in FRI 2. Simple to drag 8C KLT from kickout list to FRI 2.

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The last problem looks like this:

🏆 1- Tplan - dokka [790] [Registered version]									
Files Edi	t Format	s Functio	ons Control	Run Mai	ntenance Compressed Help				
School T	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection								
Selection	9B	EVE	LH	TØ	Display kicked out activities				
MON1	MUS	9B-MUS	9A § NAKH 1	10A § PRO 6					
MON 2	NM1		9BINM1		Display not laid activities				
MON 3	SAF		9A § NAKH 3	9B SAF	🔲 Display erased activities 🛛 🗙 🗙 🗌				
MON 4	ENG		9A MAT	SA MAT	Display parked activities				
MON 5	TVI								
MON 6	NOR	B.		9B NOR					
TUE 1	HK		8A § NEM 1						
TUE 2	HK		9A MAT	9A MAT	Select pos 🔻 🔚 🗗 🔓				
TUE 3	HK			XXX PLAN					
TUE 4	MAT		9B MAT	9B MAT	⊟ K) ● [1/1]: 9B KRL				
TUE 5	GYM	8B MUS		9A GYM	9B KRL LH 206				
TUE 6	GYM	в.		9A GYM					
VED1	SAF		8A NEM 6	9B SAF					
VED 2	NOR	10C MUS	8C MAT	9B NOR					
VED 3	TV	8A MUS							
VED 4	TV	8C MUS							
VED 5			9A MAT	9A MAT					
VED 6	MAT	В.	9B MAT	9B MAT					
THU1	ENG	в.							
THU 2	NOR	B.		9B NOR					
THU 3	KBLT	B.	9B KRLT	9B KRLT					
THU 4	§ NAKH 3	B.	9B § NAKH 3						
THU 5	§NAKH 2	B.	9A-NM1	10A GYM					
THU 6	§NAKH1	B.	9B § NAKH 1	10A GYM					
FBI1	§PRO 1	10B MUS	9A § PRO 1	9A § PRO 1					
FBI2	§PRO 2		9A § PRO 2	9A § PRO 2					
FRI3	§PRO 3	10A MUS	9A § PRO 3	9A § PRO 3					
FBI4	MAT		9B MAT	9B MAT					
FRI5	ENG	9A MUS	8A § NEM12						
FRI6	NO			9B NO					
•				Þ					
SELECT	9B LH 206	6 KRL C	CAT: 4		-				

The problematic period is WED 5 with teachers LH and TØ. LH is the main teacher in MAT while TØ is a support teacher. The interchange possibilities are minimal: EVE may move from MON 1 to WED 5. Not much help in that since MON 1 is problematic for both LH and TØ. FRI 6 is the last sensible possibility since LH (the most important teacher) is available here. A solution is then: Drag 9B NO from FRI 6 to WED 5 and accept the double assignment for teacher TØ in WED 5. 9B KRL may then be dragged from kickout list to FRI 6. We do this and get this selection:

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🌇 1- Tplan - dokka [790] [Registered ver 💶 💷 💌										
Files Edi	t Format	s Functio	ns Contro	Run						
Maintenar	Maintenance Compressed Help									
	uuu be së tëre pë e									
School T	School Teachers Teacher pools Classes Rooms Subje									
Selection	Selection 9B EVE LH TØ									
MON1	MUS	9B MUS	9A § NAKH 1	10A § PRO 6						
MON 2	NM1		9BINM1							
MON 3	SAF		9A § NAKH 3	9B SAF						
MON 4	ENG		9A MAT	9A MAT						
MON 5	TV1									
MON 6	NOR	в.		9B NOR						
TUE 1	нк		8A § NEM 1							
TUE 2	нк		9A MAT	9A MAT						
TUE 3	НК			XXX PLAN						
TUE 4	MAT		9B MAT	9B MAT						
TUE 5	GYM	8B MUS		9A GYM						
TUE 6	GYM	в.		9A GYM						
VED1	SAF		SA NEM 6	9B SAF						
VED 2	NOR	10C MUS	SC MAT	9B NOR	۱ ۱					
VED 3	TV	8A MUS			-					
WED 4	TV	8C MUS								
VED 5	NO		9A MAT	"DPL						
WED 6	MAT	в.	9B MAT	9B MAT						
THU1	ENG	в.								
THU 2	NOR	в.		9B NOB						
THU 3	KBLT	в.	9B KRLT	9B KBLT						
THU 4	§NAKH 3	В.	9B § NAKH 3							
THU 5	§NAKH 2	В.	9A NM1	10A GYM						
THU 6	§NAKH1	В.	9B§NAKH1	10A GYM						
FBI1	§ PBO 1	10B MUS	9A § PBO 1	9A § PBO 1						
FBI2	§ PRO 2		9A § PRO 2	9A § PRO 2						
FBI3	§ PRO 3	10A MUS	9A § PRO 3	9A § PRO 3						
FBI4	MAT		9B MAT	9B MAT						
FRI5	ENG	9A MUS	8A § NEM12							
FRI6	KRL		9B KRL		Ŧ					
•)						
SELECT 9	B LH 206	KRL C	AT: 4							

Notice double assignment (*DPL) for TØ in WED 5 and we intend to let teacher EG be a substitute here. We blow up (F5) the figure above and include EG in selection. Then we drag 9A MAT from TØ to EG.

That gives:

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TP 1- Tpla	an - dokka	[790] [Regist	ered version]		×	TIMETABLE COMPLETED!
<u>Files</u> Ed	lit Form <u>a</u>	ts F <u>u</u> nctions	Control	<u>R</u> un		
Maintena	ance Com	n <u>p</u> ressed <u>H</u> e	lp			(With a few minor compromises.)
	n ei		I r e		F	
Sebeel 1	Tapahara					
Colorities						
Selection MON 1	SMAKH1	EG		104 8 PPO 6		
MON 2	SNAKH 2	SR MAT	9R NM	IOA S FHO O		
MON 3	SNAKH3		9A SNAKH 3	9B SAF	(II.	
MON 4	MAT		94 MAT	94 MAT		
MON 5	TVI					
MON 6	NO			SB NOB	(III	
THE 1	ENG	24 SNEM 1	24 SNEM 1			
THE 2	MAT	ON STOLINT	94 MAT	94 MAT		
TUE 3	NOB	XXX PLAN		XXX PLAN		
TUE 4	SAF	10A SUTPL 1	9B MAT	9B MAT		
TUE 5	GYM	10A SUTPL 1		9A GYM	(III	
TUE 6	GYM	10A SUTPL 3		9A GYM		
VED 1	ENG	8A NEM 6	SA NEM 6	9B SAF		
VED 2	KBL	SC MAT	SC MAT	9B NOB		
VED 3	TV					
VED 4	TV				í II.	
VED 5	MAT	9A MAT	9A MAT	9B NO		
VED 6	NOR		9B MAT	9B MAT		
THU1	НК					
THU 2	HK	XXX ADM		9B NOR		
THU 3	НК		9B KRLT	9B KRLT		
THU 4	KRLT		9B § NAKH 3			
THU 5	NM1		9A-NM1	10A GYM		
THU 6	ENG		9B § NAKH 1	10A GYM		
FBI1	§PRO 1	в.	9A § PRO_1	9A § PRO 1		
FBI2	§PRO 2	B.	9A § PRO 2	9A § PRO 2		
FRI3	§PRO 3	B.	9A § PRO 3	9A § PRO 3		
FBI4	NOR		9B MAT	9B MAT		
FRI5	MUS	8A § NEM12	8A § NEM12			
FRI6	SAF		9B KRL		Ψ.	
< □				Þ		
ОК						
		_	_			

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6.3.4 Example 4

The results from a main run look like this:

90	10A	10B	10C	ØVR	RØD	AUS	V Display kicked out activities
9C § HKNM 4	10A KRØ	10A KRØ	10C × NOMA 1			8B 8	Display not laid activities
9C § HKNM 4	10A NO 1	10B NO	10C × NOMA 2			8B (Display rectaid activities
9C § HKNM 6	10A # SKEV	10A # SKEV	10A # SKEV			8B I	Display erased activities
9C × NAEN 1	10A # SKEV	10A # SKEV	10A # SKEV				Display parked activities
9C SAF	10A # TV 1	10A # TV 1	10A # TV 1		9B EN	10A	Display selected activities
9C × NAEN 2	10A # TV 1	10A # TV 1	10A # TV 1			10A	
9C NOMA 3	10A NAT	10B EN	10C EN		10B EN	100	Select pos 🔻 🔡 🖪
9C NAEN 3	10A NO 1	10B NAT	10C 🛛 NOMA 3			8B 8	
9C BIO	10A ENNA 3	10B SAF	10C NAT		9B EN	10A	
9C MUS	10A NOMA 5	10B × NOMA 2	10C SAF			8B I	
9C NO	10A SAF 3	108 × NOMA 1	10C × NOMA 4				IUA KHL LIE 17
	10A # TV 1	10A # TV 1	10A # TV 1			10A	
9C BIO	10A KOH	108 MA	10C MA				
9C SAF	10A KOH	10B NO	10C NO				
9C NAEN 3	10A × NOMA 1	10B EN	10C KOH		10B EN		
9C § HKNM 1	10A KRØ	10A KRØ	10C KOH			8B (
9C § HKNM 1	10A KRØ	10A KRØ	10C SAF				
9C § HKNM 3	10A × NOMA 2	10B NAT	10C KRØ				
9C KUH		108 MA	10C NO		B*	8B ¤	
9C KUH	10A NOMA 5	10B SAF	10C MUS		B*	8B ¤	
9A # SKEV	10A X ENNA 1	10B NO	10C NAT		B*	10A	
9A # SKEV	10A 🛛 ENNA 2	10B MUS	10C SAF			10A	
9A # TV 1	10A NO 1	108 × ENNA 1	10C EN		10B R ENNA 1	100	
9A # TV 1	10A SAF 1	108 × ENNA 2	10C KRL		108 8 ENNA 2	8B (
9A # TV 1	10A SAF 1	10B KRL	10C KRØ				
9C SAF	10A NAT	10B KOH	10C KRØ		9B 🖄 NAEN 1	8B (
9C × NOMA 1	10A MUS	108 KOH	10C MA		9B R NAEN 2		
9C × NOMA 2	10A ENNA 3	108 × NOMA 3	10C NO			10A	
9C KRØ	10A × NOMA 3	108 × NOMA 4	10C × ENNA 1			10C	
9C KRØ	10A × NOMA 4	10B SAF	10C 🛛 ENNA 2			10C	

We start with adjusting 10A KRL, use P4 and gets this selection:

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Selection	10A	LIE
MON 1 815 - 900	10A KRØ	10A KRØ
MON 2 910 - 955	10A NO 1	10A NO 1
MON 3 1005 - 1050	10A # SKEV	
MON 4 1120 - 1205	10A # SKEV	
MON 51215-1300	10A # TV 1	8C KRØ1
MON 6 1310 - 1355	10A # TV 1	
TUE 1 815 - 900	10A NAT	10A NAT
TUE 2 910 - 955	10A NO 1	10A NO 1
TUE 3 1005 - 1050	10A ENNA 3	
TUE 4 1120 - 1205	10A NOMA 5	
TUE 51215-1300	10A SAF 3	
TUE 6 1310 - 1355	10A # TV 1	
WED 1 815 - 900	10A KOH	10A KOH
WED 2 910 - 955	10A KOH	10A KOH
WED 31005 - 1050	10A 🛛 NOMA 1	10A X NOMA 1
WED 4 1120 - 1205	10A KRØ	10A KRØ
WED 51215-1300	10A KRØ	10A KRØ
WED 6 1310 - 1355	10A 🖄 NOMA 2 👘	10A × NOMA 2
THU 1 815 - 900		9C KUH
THU 2 910 - 955	10A_NOMA.5	9C KUH
THU 3 1005 - 1050	10A 🛛 ENNA 1	
THU 4 1120 - 1205	10A 🛛 ENNA 2	
THU 51215-1300	10A NO 1	10A NO 1
<u>THU 6 1310 - 1355</u>	10A SAF 1	10A SAF 1
FRI 1 815 - 900	10A SAF 1	10A SAF 1
FRI 2 910 - 955	10A NAT	10A NAT
FRI 3 1005 - 1050	10A MUS	8C KRØ
FRI 4 1120 - 1205	10A ENNA 3	8C KRØ
FRI 51215-1300	10A 🛛 NOMA 3	10A × NOMA 3
FRI 6 1310 - 1355	10A 🛛 NOMA 4	10A × NOMA 4

We use P4 once more with THU 1 as actual period (Category= Small parallels)

10A	AUS	BRE	BRY	JOH	LAN	LIE	LUN	SOL
10A KRØ	8B ENNA 3				9B KUH	10A KRØ		10A KRØ
10A NO 1	8B SAF		10A NO 1		9B KUH	10A NO 1		
10A # SKEV	88 KRL			10A # SKEV				8A KRØ
10A # SKEV			9A NOMA 3	10A # SKEV			8B NO 1	8A KRØ
10A # TV 1	10A # TV 1		9C SAF	8C KRØ1		8C KRØ1		88 KRØ
10A # TV 1	10A # TV 1		9B_NOMA 5					88 KRØ
10A NAT	10C EN		8A TV 1	9A § HKNM 1		10A NAT		10A NAT
10A NO 1	8B ENNA 3		10A NO 1	9A § HKNM 1	8C KUH	10A NO 1		
10A ENNA 3	10A ENNA 3		10A ENNA 3	9A § HKNM 3	8C KUH			
10A NOMA 5	8B KRL	9C MUS	98 § HKNM 1	10A NOMA 5	9A KUH		10A NOMA 5	10A NOMA 5
10A SAF 3			98 § HKNM 1	10A SAF 3	9A KUH			10A SAF 3
10A # TV 1	10A # TV 1	9A MUS	98 § HKNM 3				8B NO 1	
10A KOH				9A § HKNM 6	10A KOH	10A KOH		
10A KOH		98 MUS	9C SAF	9A § HKNM 4	10A KOH	10A KOH		
10A × NOMA 1			10A X NOMA 1	9A § HKNM 4	10C KOH	10A × NOMA 1		10A X NOMA 1
10A KRØ	8B SAF				10C KOH	10A KRØ		10A KRØ
10A KRØ					88 KUH	10A KRØ		10A KRØ
10A × NOMA 2				10C KRØ	88 KUH	10A × NOMA 2	10A × NOMA 2	10A 🛛 NOMA 2
	8B 🛛 ENNA 1		9A × NOMA 1		9С КИН	9С КИН		
10A NOMA 5	8B 🛛 ENNA 2	10C MUS	9A × NOMA 2	10A NOMA 5	9C KUH	9C KUH	10A NOMA 5	10A NOMA 5
10A ¤ ENNA 1	10A × ENNA 1		10A X ENNA 1		9A # SKEV		88 NO 1	10A X ENNA 1
10A × ENNA 2	10A × ENNA 2	10B MUS			9A # SKEV		10A × ENNA 2	10A X ENNA 2
10A NO 1	10C EN		10A NO 1		9A # TV 1	10A NO 1		
10A SAF 1	8B SAF	8A MUS	10A SAF 1		9A # TV 1	10A SAF 1	10A SAF 1	10A SAF 1
10A SAF 1		88 MUS	10A SAF 1	10C KRØ	9A # TV 1	10A SAF 1	10A SAF 1	10A SAF 1
10A NAT	8B SAF	8C MUS	9C SAF	10C KRØ	10B KOH	10A NAT		10A NAT
10A MUS		10A MUS		8C KRØ	10B KOH	8C KRØ		8A KRØ1
10A ENNA 3	10A ENNA 3		10A ENNA 3	8C KRØ	8A KUH	8C KRØ		88 KRØ1
10A [×] NOMA 3	10C × ENNA 1		10A [×] NOMA 3	9A KRØ	8A KUH	10A × NOMA 3		10A × NOMA 3
10A × NOMA 4	10C × ENNA 2		8A TV 1	9A KRØ		10A × NOMA 4	10A X NOMA 4	10A × NOMA 4

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We must find a period where LIE is available and which may be moved to THU 1. The most reasonable seems to be TUE 4 which makes a double of 10A NOMA 5 which is acceptable. We do this drag/drop and get this message:



Next we drag 10A KRL from kickout list to TUE 4 and get this message:



This problem is solved and we continue with 9C KRL and create this selection:



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The available period for 9C is TUE 6 being actual pos and Category: Small parallels. We are looking for a period where teacher HEL and BRY is available. A little inspection of the figure above shows: 9C NOMA1 may be moved from FRI 3 to TUE 6 breaking a day conflict which is acceptable. Then BRY and HEL are both available in FRI 3 and 9C KRL may be assigned here. Two drag/drop- operations complete the timetable. The total error warnings (LIANW) are:

I- C:\test29\914REF1.tpd							
<u>Files Edit Formats Functions Control Run H</u> elp							
	II 并 [
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods	Steering Compresse						
LIANW - Manual errors and/or comp	romises 🔻						
WARNING (OR ERROR) FOR ACTIVITY: ACTIVITY HAS PER-LENGTH 2 ON: THURSDAY	10A NOMA 5						
WARNING(OR ERROR) FOR ACTIVITY: ACTIVITY HAS SEVERAL PER. ON: TUESDAY	9C BIO						
TEACHERS BEING ASSIGNED ON FORBIDDEN POSITION: TEACHER DAY POSITION SAN THURSDA 3 SAN THURSDA 4							

The broken blockings for teacher SAN is in the period register while the two first warnings are caused by our drag/drop operations.

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6.3.5 Example 5 (A Danish Gymnasium)

The result of a partial main run looks like this:

🏆 1- Tplan - Esbjerg Statsskole [003] [Registered version]									
<u>F</u> iles <u>E</u> dit Form <u>a</u>	<u>Files Edit Formats Functions Control Run Maintenance Compressed H</u> elp								
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selectic									
Selection	2p	GL	BP		📝 Displau	kicked out activities			
VED 7 1350 - 1435	2p +++ mhdpA1	2p •••			Dioplay	not laid activities		222	
VED 8 1445 - 1530	- 1530 B* Uisplay not laid activities								
	2p = F2dpA1				Uisplay	erased activities			
THU 2 900 - 945	2p = PZapAt 2p = daSP	2n -	20 -		Display	parked activities		P PP	
THU 4 1050 - 1135	2p = daSP 2p = daSP	20 =	20 =		📃 Display	special activities		<mark>5</mark> 55	
THU 5 1200 - 1245	2p +++ F1spA1	в.							
THU 6 1255 - 1340					Select	pos 🔻 🔡 🖪	F2 S		
THU 7 1350 - 1435									
<u>THU 8 1445 - 1530</u>	B.				₩. <mark>K</mark>	[1/1]: 2p F2spA	2		
FBI1	3z +++ h1spA3		в.		€ <mark>.</mark> K	[1/1]: 3x daA			
FRI 2 900 - 945	2p +++ mhspA1	2p •••	B.		⊕… <mark>K</mark> >	[1/1]: 3y da			
FRI 3 300 - 1040			8		🗄 - 🔣 🔍	[1/1]: 2b enA			
FBI 5 1200 - 1245			B			[1/1]: 2a tyB			
FRI 6 1255 - 1340			B.		⊞ <mark>K)</mark>	[1/2]: 2a hi			
FRI 7 1350 - 1435	в.		B.		Ē.	[2/2]: 2a hi			
FRI 8 1445 - 1530	B.		B.			[1/2]: 2n biSP			
mon 1	3z +++ h1dpA5					[172]. 2p hist [272]. 2p hist			
mon 2 900 - 945	3z +++ h1dpA5					[272]. 20 mar			
mon 3 955 - 1040	2p = mhdpA5	2p =				[27 F]: 3a ni			
mon 4 1050 - 1135	2p = mhdpA5	2p =	2-		₩. <mark>K</mark>)	[172]: 3y hi			
mon 5 1200 - 1245 mon 6 1255 - 1340	2p = Gab 2p = FldpAl	B	2p =			[272]: 3y hi			
mon 7 1350 - 1435	2p = F1dpA1				€… K)	[1/1]: 3y hi			
mon 8 1445 - 1530	в.				⊕ K)	[2/1]: 3y hi			
tue 1	2p = F1dpA1				₿∾K>	[1/1]: 3a ol			
tue 2 900 - 945	2p = F1dpA1				⊞ K	[1/1]: 3x ol			
<u>tue 3 955 - 1040</u>	2p +++ F2spA1	v2 #=				[1/1]: 3y ol			
tue 4 1050 - 1135		v2 #=				[1/1]: 2z fv			
tue 5 1200 - 1245	0- L11-A7	B.			Ē.	[1/2]· 3u hkZ			
tue 7 1250 - 1340	3z = n1dpA7					[2/2]: 3µ bkZ			
tue 8 1445 - 1530	B"					[1/2]: 1a mu			
wed 1	2p = F2dpA1					[172]. Ta mu [272]: 1- mu			
wed 2 900 - 945	2p = F2dpA1			+		[272]. Ta mu			
•			Þ		⊞ <mark>K)</mark>	[171]: 3y of			
SELECT 2p GL af3	hiSP CAT: 3								

This is far from a simple table and we will only show a part of the adjustments. (There are 80 pos in the table and we can't show complete screens.) . In the above figure it is natural to start with the double in 2p hiSP. From our selection we see that THU 6-7 may apparently be used without problems. That is simply solved with 2 drag/drops from kickout list to those periods. You can safely assume that TPLAN is not using those periods due to other conflicts, but for the moment we see nothing better to do. Next we continue with:

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🃭 1- Tplan - Esbjerg Statsskole [003] [Registered version]													
<u>F</u> iles <u>E</u> dit Form <u>a</u> t	ts F <u>u</u> nctions	C <u>o</u> ntrol <u>R</u> un	<u>M</u> aintenance	Compressed <u>H</u> elp									
School Teachers 1	eacher pools Cla	asses Rooms S	ubjects Block	ks Periods Steering Compressed Selection Full Text									
Selection	3a	4a	CC 🖌	Display kicked out activities									
FRI 8 1445 - 1530	в.												
mon 1	3z +++ h1dpA5			Display not laid activities									
mon 2 900 - 945	3z +++ h1dpA5			📄 Display erased activities 🛛 🗙 🗙 🗙									
<u>mon 3 955 - 1040</u>	2p = mhdpA5	2p = mhdpA5	2p =	📃 Display parked activities 🛛 🕒 🕑 🕑									
<u>mon 4 1050 - 1135</u>	2p = mhdpA5	2p = mhdpA5	2p =	Display special activities									
mon 5 1200 - 1245	3a id3az3	3a id3az3											
mon 6 1255 - 1340	3a id3az3	3a id3ax3	2-										
mon 7 1390 - 1435	3a = 01 2a - 62co 01	20 = enA 2a = b2cp.01	3 y =										
11011 0 1443 - 1330	Ja = nZSPAT	Ja = nZSPAT	1.	E 1/1 1: 2n E2enA2									
$\frac{1}{100} \frac{1}{2} \frac{900}{900} = 945$	3a = h2dpA1	3a = n2dpA1	1a =										
tue 3 955 - 1040	3a = n2upAt 3a +++ h3dn 01	sa = nzupAt											
tue 4 1050 - 1135	3a +++ h3dnA1												
tue 5 1200 - 1245	3a = daB	3a = daB											
tue 6 1255 - 1340	3z = h1dpA7			🗄 🐨 🔣 🔰 🚺 1/1]: 2a tyB									
tue 7 1350 - 1435	3z = h1dpA7												
tue 8 1445 - 1530	3a #= TYFC			E 2/2 1: 2a hi									
wed 1	3a = ol	2b = enA											
wed 2 900 - 945	3a = ol	2b = enA											
wed 3 955 - 1040	3z = h1dpA1		1a =										
wed 4 1050 - 1135	3z = h1dpA1			⊕·· <mark>K) [2/2]: 3y hi</mark>									
wed 5 1200 - 1245	3a +++ h2spA2	3a +++ h2spA2		⊕- K) [1/1]: 3y hi									
wed 6 1255 - 1340	2p +++ mhdpA1	2p +++ mhdpA1	2p •••										
wed 7 1350 - 1435	2p +++ mhdpA1	2p +++ mhdpA1	2p +++										
wed 8 1445 - 1530	B.			H-R) [1/1]: 3x ol									
thu 1	3a = hi	3a = hi	3a =										
thu 2 900 - 945	0- 10-14	4											
Chu 3 955 - 1040	3a = h3spA4	la = Dl											
thu 5 1200 - 1135	3a = daA 2a - daA	3a = 0aA 2a - dað	2= -	I ⊕•• <mark>K) [1/2]: 3y bkZ</mark>									
thu 6 1255 - 1340	3a bkZ	Ja - Uam	3= -	⊕ K) [2/2]: 3y bkZ									
thu 7 1350 - 1435	3a bkZ		3.	🗄 🔣 🚺 🚺 🗄 🕅 🗄 🐨									
thu 8 1445 - 1530	B.												
fri 1	2p +++ mhspA1	2p +++ mhspA1	20 ***	H - R [1/1]: 3v ol									
fri 2 900 - 945	3z = h1spA1	1a = bi											
SELECT 3a CC af3	hi CAT: 3												

We next try to assign 3a hi and may be made by creating a double on thu. We accept that. We cannot show all details in the continuation. We concentrate to first to get rid of the small parallels in the kickout list (i.e.) we show it for the double in 1a mu:

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🃭 1- Tplan - Esbjerg Statsskole [003] [Registered version]												
<u>F</u> iles <u>E</u> dit Form <u>a</u> t	<u>Files</u> <u>E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Compressed <u>H</u> elp											
) Q B (Y	P										
School Teachers T	eacher pools	Classes Roo	oms Subjects	ts Blocks Periods Steering Compressed Selection								
Selection	1a	4d	PE	Diselection and and and and and and and and and an								
MON 1	1a = da	1a = da	va #=									
MON 2 900 - 945	la = stv	la = stv	va #=	🛛 🔄 Display not laid activities 🛛 🚺 🚺 🚺								
MON 3 955 - 1040	1a = bi	1a = bi		📃 Display erased activities 🛛 🗙 🗙 🗶								
MON 4 1050 - 1135	1a = mu	1a = mu	1a =	Display parked activities								
MON 5 1200 - 1245	1a = mu	1a = mu	1a =									
MON 6 1255 - 1340	1a = naB	1a = naB	2p •••	Disbiga sherigi goriariges								
MON 7 1350 - 1435	1a = s1spA1	1a = s1spA1										
<u>MON 8 1445 - 1530</u>	в.			Select pos 🔻 🔡 🖪 F2 S								
TUE 1	1a = IaC	1a = IaC										
TUE 2 900 - 945	1a = hi	1a = hi										
TUE 3 955 - 1040	la = da	1a = da	1z =	⊕ · K) [1/1]: 3x daA								
TUE 4 1050 - 1135	<u>1a = bi</u>	1a = bi	1z =	⊞- K) [1/1]: 3v da								
TUE 5 1200 - 1245	1a = bi	1a = bi	_	$\mathbb{H}_{\mathbb{H}}$ [1/1]: 2a tuB								
TUE 6 1255 - 1340	1D	1 D		$\overrightarrow{\mathbf{W}}$ [1/2] $\overrightarrow{\mathbf{V}}$ [1/2] $\overrightarrow{\mathbf{V}}$ [1/2]								
TUE 0 1445 1520	la = enB	la = enB	_									
TUE 8 1440 - 1030	в			⊕~ <mark>K)</mark> 2/2]: 2a hi								
	1a = s1dpA1	1a = s1dpA1	va #=									
WED 2 900 - 945	la = sldpAl	la = sldpAl	va #=	⊞ K) [2/2]: 3y hi								
WED 3 300 - 1040	la = tyA	la = tyA	3a =	(H-K) [1/1]: 3u hi								
VED 5 1200 1245	la = tyA 1a = bi	la = tyA 1a - bi	1p =									
WED 6 1255 - 1240	1a - 00		2p									
WED 7 1350 - 1435	1a - enő	1a - enő	20									
VED 8 1445 - 1530	B"											
THU 1	1a idY		27	⊕ K [1/2]: 3y bkZ								
THU 2 900 - 945	la idY		22.000									
THU 3 955 - 1040	1a = IaC	1a = IaC	3a =									
THU 4 1050 - 1135	1a = hi	1a = hi	3a =	1a mu PE 920 "1a mu"								
THU 5 1200 - 1245	1a = hi	1a = hi										
THU 6 1255 - 1340	1a = s1dpA1	1a = s1dpA1		I <u>H</u>								
THU 7 1350 - 1435	1a = s1dpA1	1a = s1dpA1		⊞… <mark>K) [1/1]: 3y ol</mark>								
THU 8 1445 - 1530	в.											
FBI 1	1a = naA	1a = naA										
FRI 2 900 - 945	1a = naA	1a = naA	2p +++ 🔻									
•			•									
SELECT 1a PE 920	mu CAT	1:3										

One of the periods may be assigned as a single in TUE 6. We accept that and our next selection shows:

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TP 1- Tplan - Esbjerg	👖 1- Tplan - Esbjerg Statsskole [003] [Registered version]												
<u>Files</u> Edit Form <u>a</u> t	<u>Files E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Compressed <u>H</u> elp												
	IQA	" Þ ř) m [o	₽₩₩									
School Teachers 1	Feacher pools	Classes Roo	ms Subj	ects Blo	cks Per	riods Ste	ering	Compres	ssed 9	Selection Full Text Tables Listings Various			
Selection	1a	44	LA	CC	BD	PE	HJ	AK		Diseles histories RR			
FRI 7 1350 - 1435	B.							в.					
FRI 8 1445 - 1530	в.				B.			в.		Usplay not laid activities			
<u>mon 1</u>	1a = naA	1a = naA	1a =		_	va #=			-	Display erased activities			
mon 2 900 - 945	1a = naA	1a = naA	1a =	0	_	va #=		-		🔲 Display parked activities 🛛 🕒 🕑 🕑			
mon 3 955 - 1040	1a = da 1a - da	1a = da 1a - da		2p =		2p =		B-		Display special activities 555			
mon 5 1200 - 1245	la = teA	la = teA		2p -	B*	2p -		1a =					
mon 6 1255 - 1340	1a = tyA	1a = tyA						1a =		Select pos 🔻 🔜 🖪 F2 S			
mon 7 1350 - 1435	1a = s1spA1	1a = s1spA1	2y =	3y =	1a =			1a =					
mon 8 1445 - 1530	в.		3a =			3a =							
tue 1	1a = IaD	1a = IaD	3a =	1a =		3a =	2b =			⊕ <mark>K) [1/1]: 3x daA</mark>			
<u>tue 2 900 - 945</u>	1a = da	1a = da	3a =			3a =	2b =			· · · · · · · · · · · · · · · · · · ·			
tue 3 955 - 1040	1a = naA	1a = naA	1a =		v2 #=								
<u>tue 4 1050 - 1135</u>	1a = naA	1a = naA	1a =		v2 #=			_		1 + 1 + 1 + 2 + 2 + 3 = 1 +			
tue 5 1200 - 1245	1a = enB	1a = enB	2y =		B.			B.					
tue 6 1255 - 1340	1a = mu 1a = mu	1a = mu 1	29 =			1a =		B.		i			
tue 9 1445 - 1520	na = mu p•	ia = mu				ld =		D.					
ue 0 1445 - 1550	12 - c1de 01	1a - cide ô i	2		12 -	us #-		12.0		⊕ <mark>K) [2/2]: 3y hi</mark>			
wed 2 900 - 945	1a - s1dp#1	1a = stupAt	2g = 2m -	3	1d = 1a -	va #=		1a = 1a -		i∰ K) [1/1]: 3y hi			
wed 3 955 - 1040	la = laC	la = laC		1a =	10-	1n =				⊕ <mark>K) [2/1]: 3y hi</mark>			
wed 4 1050 - 1135	1a = hi	1a = hi				1p =	1a =			⊞- K) [1/1]: 3v ol			
wed 5 1200 - 1245	1a = hi	1a = hi	3a +++		B.	3a +++	1a =	B.		• R [1/1]: 27 fu			
wed 6 1255 - 1340	1a idZ			2p •••		2p •••		в.					
wed 7 1350 - 1435	1a idZ			2p •••		2p •••		в.					
wed 8 1445 - 1530	B.							в.					
thu 1	1a = tyA	1a = tyA	B.	3a =	B.			1a =		i 2/2 j: la mu			
thu 2 900 - 945	1a = tyA	1a = tyA	B.	3a =	B.			1a =		1a mu PE 920 "1a mu"			
thu 3 955 - 1040	la = bi	la = bi	B.		B				-	⊞ K) [1/1]: 3y ol			
thu 5 1200 - 1135	la = enA la = enA	ia = enA 1a - enA	B.	2	B.			B .					
thu 6 1255 - 1340	la = hi	la = hi	B.	3= =	B"		1a =	B'					
thu 7 1350 - 1435	1a = da	1a = da	B.	3. =	B.		2b =	B.					
thu 8 1445 - 1530	B.		в.		B*			B.					
fri 1				2p •••		2p •••							
fri 2 900 - 945	1a = bi	1a = bi											
fri 3 955 - 1040	1a = IaC	1a = IaC	3a +++	1a =		3a +++			Ŧ				
•								Þ					
SELECT 1a PE 920	mu CAT	l: 5 fri 1											

We have selected 1a mu and used fri 1 as actual period. Quit a number of periods may be moved to fri 1. We look for a period where PE is available. We end up with:

TP 1- Tplan - Esbjerg	🧏 1- Tplan - Esbjerg Statsskole [003] [Registered version]															
<u>Files</u> Edit Format	ts F <u>u</u> nctions	Control	Run <u>M</u> a	aintenand	e Com	pressed	<u>H</u> elp	D								
		' P									* 🗆		ISP		EE	•
School Teachers 1	Feacher pools	Classes Roo	ms Subj	ects Blo	cks Per	iods Ste	ering	Compress	ed Sele	ection	Full Text	Tables	Listings	Various]	
Selection	1a	44	LA	ICC	BD	PE	HJ	AK		D: I	12-1-1-1					
FRI 7 1350 - 1435	в.							в.	V	Display	KICKED OU	Cactivitie	2		000	5
FRI 8 1445 - 1530	в.				B.			в.		Display	not laid ac	tivities				
mon 1	1a = naA	1a = naA	1a =			va #=				Display	erased ac	tivities			XXX	<u>s</u>
mon 2 900 - 945	1a = naA	1a = naA	1a =		_	va #=	_	_		Display	parked ac	tivities			PPE	
mon 3 955 - 1040	1a = da 1a - da	la = da la = da		2p =		2p =		B.		Display	special ac	tivities			5 5 5	
mon 5 1200 - 1135	1a = ua 1a = mu	1a = ua 1a = mu		2p =	B.	2p = 1a =		D								- 1
mon 6 1255 - 1340	1a = teA	la = tuA			-			1a =	Se	elect	pos 🔻	-	F2	sl		
mon 7 1350 - 1435	1a = s1spA1	1a = s1spA1	2y =	3y =	1a =			1a =			•					
mon 8 1445 - 1530	в.		3a =			3a =				K)	[1/1]:	2p F2sp	A2			
tue 1	1a = IaD	1a = IaD	3a =	1a =		3a =	2b =		÷.	K)	[1/1]:	3x daA				
tue 2 900 - 945	1a = da	1a = da	3a =			3a =	2b =		Ē	R	11/11	3u da				
tue 3 955 - 1040	1a = naA	1a = naA	1a =		v2 #=			_		E.	11/11	2a tuR				
tue 4 1050 - 1135	1a = naA	1a = naA	1a =		v2 #=			_			11/21	20 (y) 25 ki				
tue 5 1200 - 1245	1a = enB	1a = enB	2g =		B.		_	B.		E.	[1/2]:	Zani				
tue 6 1255 - 1340	1a = mu	1a = mu	2g =			1a =	_	B.	±	R)	[272]:	2a hi				
tuo 9 1445 1520	la = mu P	ia = mu				la =		B .	. <u>+</u>	R)	[1/2]:	3y hi				
ue 8 1445 - 1550		1a - c1de 01	2		12	un 8-		1	÷.	- K	[2/2]:	3y hi				
wed 1 wed 2 900 - 945	1a = S10pA1 1a = c1dpA1	1a = stopAt	29 = 2= -	2= -	1a = 1a -	va s=		1a =	÷.	- K)	[1/1]:	3y hi				
wed 2 300 - 343	la = laC	la = laC	4y -	1a =	10 -	1n =		10 -	÷.	K)	[2/1]:	3y hi				
wed 4 1050 - 1135	1a = hi	1a = hi				1p =	1a =		÷.	-R)	11/1 i:	3v ol				
wed 5 1200 - 1245	1a = hi	1a = hi	3a +++		B.	3a +++	1a =	в.		R	11/11	27 fu				
wed 6 1255 - 1340	1a idZ			2p +++		2p +++		в.			11/21	311.647				
wed 7 1350 - 1435	1a idZ			2p •••		2p •••		в.			1 1/2 1	39 DKZ				
wed 8 1445 - 1530	в.							в.			[272].					
thu 1	1a = tyA	1a = tyA	B.	3a =	B.			1a =	±	K) •	[171]):	3y ol				
thu 2 900 - 945	1a = tyA	1a = tyA	B.	3a =	B.			1a =								
thu 3 955 - 1040	1a = bi	la = bi	B.		B.											
thu 5 1200 - 1135	la = enA	la = enA	B-	2	B			D -								
thu 6 1255 - 1340	la = hi	la = hi	B*	3= =	B"		1a =	B								
thu 7 1350 - 1435	1a = da	1a = da	B.	3. =	B.		2b =	B.								
thu 8 1445 - 1530	B.		B.		B.			в.								
fri 1	1a = tyA	1a = tyA		2p •••		2p •••		1a =								
fri 2 900 - 945	1a = bi	1a = bi														
fri 3 955 - 1040	1a = IaC	1a = IaC	3a +++	1a =		3a +++			T							
•								+								
SELECT 1a PE 920	mu CAT	: 5 fri 1														at

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We have moved 1a tyA from mon 6 to fri 1 (teacher AK) and inserted 1a mu in mon 6. Our error warnings (LianW) looks like this:

🌇 1- Tplan - Esbjerg Statsskole [003] [Registered version]			_		x						
<u>Files Edit</u> Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance <u>H</u> elp											
DID 🛏 🔍 🏝 🖓 🛍 🖻 🖻 🛏 🖽 🖬 🖬 🗮 🔛 🚺											
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed 🔹 🛌										
LIANW - Manual errors and/or compromises											
WARNING(OR ERROR) FOR ACTIVITY: REGISTRERED PER. : 4*DP PLASSERTE PER. : 2*SP 3*DP REMAINING POS REGARDED AS SINGLEL-PER. MODIFY REGISTER!!	1a	tyA			•						
WARNING (OR ERROR) FOR ACTIVITY: REGISTRERED PER. : 4*SP 1*DP PLASSERTE PER. : 2*SP 2*DP REMAINING POS REGARDED AS SINGLEL-PER. MODIFY REGISTER!!	3a	hi			=						
WARNING (OR ERROR) FOR ACTIVITY: REGISTRERED PER. : 3*DP PLASSERTE PER. : 2*SP 2*DP REMAINING POS REGARDED AS SINGLEL-PER. MODIFY REGISTER!!	1a	mu			•						

This should be acceptable. The important thing now is the considerable simplified kickout list just containing pure class. Too much to show the remaining adjustments, but for fun I completed this timetable. I ended up with error warnings like this: (I will not comment further; hopefully this is acceptable from the school's point of view.)

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6.3.6 Example 7 (Module table)

The teaching unit here is small (20 min) but on the other hand the period lengths are multiple (typically 2, 3, 4 and often longer). This is an ideal situation for doing drag/drops as outlined since such a school is often willing to modify original period breakdown. (Within limits). The following school is in fact a no kickout school, but by artificial means I have succeeded in creating kickouts of 2 triples in practical subjects and they shall also be allocated as triples. The start situation is like this:

TP 1- Tplan	- NYFIKSKOL	AN [322] [Re	gistered versio	on]									
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts	F <u>u</u> nctions C <u>o</u>	ontrol <u>R</u> un	<u>Maintenance</u> Com <u>p</u> ressed <u>H</u> elp									
School Te	achers Teac	her pools Clas	ses Rooms S	Subjects Blocks Periods Steering Compressed Selectio									
Selection	9B	BB	КК	Display kicked out activities									
THU 6	9A SV												
THU 7	9A SV			Display not laid activities									
THU 8	9B LUN9B			📃 🔲 Display erased activities 🛛 📉 📉 📉									
THU 9				Display parked activities									
THU 10	9A NO												
THU 11	9A NO	XXX LUNBB	XXX LUNKK										
THU 12	9A NO												
THU 13				Select pos 🔻 🔤 🖪 F2 S									
THU 14	0.5.551	78 5981											
THU 15	SA EN	7A EVAL											
	JA EN	7A EVAL		🗎 🕀 🚯 🚺 🔁 🗄 🗎 🗎 🗎									
		TA EVAL											
		TALTAL											
		8C CI	8C CI										
EBL2	90 840												
FBI 4	9A MA	9C SI	90.51										
FBI 5		00 OL	JE JE										
FBI 6													
FBI 7	9B LUN9B												
FRI 8	9B SO												
FRI 9	9B SO												
FBI 10	9B SO												
FRI 11	9A Tæ	XXX LUNBB	XXX LUNKK	T									
•			Þ										
SELECT 98	3 KK SL1 SI	CAT: 3											

If we could get rid of 9A NO in THU 12 we could assign 9B SL in THU 12-13-14. We attempt that:

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TP 1- Tplan	🃭 1- Tplan - NYFIKSKOLAN [322] [Registered version]												
<u>F</u> iles <u>E</u> dit	<u>Files Edit Formats Functions Control Run Maintenance Compressed Help</u>												
School Tea	achers Teac	her pools Cla	sses Rooms S	Subjects Blocks	Periods Steering	Compressed Selection Full Text Tables Listings Various							
Selection	9A	9B	NJA	LKA	BAS	Displau kicked out activities							
THU 5	9A SV	9A SV	7A MA	7A MA	7A MA								
THU 6	9A S¥	9A SV	7A MA	7A MA	7A MA	Display not laid activities							
<u>THU 7</u>	9A SV	9A SV	XXX LUNNJA	XXX LUNLKA	XXX LUNBAS	📃 Display erased activities 🛛 🗙 📉 🕹							
THU 8	9A LUN9A	9B LUN9B				Display parked activities Display parked activities							
			94 10	94 10	94 NO	Display special activities							
	SA NO	SA NO	SA NO	SA NO	SA NO								
THU 12	94 NO		94 NO	94 NO	94 NO								
THU 13		SAINO	XXX NOMA	XXX NOMA	XXX NOMA								
THU 14			XXX NOMA	XXX NOMA	XXX NOMA								
THU 15	9A EN	9A EN		7A EVAL									
THU 16	9A EN	9A EN		7A EVAL									
THU 17				7A EVAL									
THU 18				7A EVAL		i [1/3]: 9B SL							
FBI 1						9B SLT KK SL1							
FRI 2						9B SLTM BB SL2							
FRI 3	9A MA	9A MA	9A MA	9A MA	9A MA								
FRI 4	9A MA	9A MA	9A MA	9A MA	9A MA								
FRI 5	9A MU		8A1 MA	8A1 MA									
FRI 6	SA MU		8AT MA	8AT MA									
	SA LUNSA	AD CONSE	AAA LUNNJA	AAA LUNLKA	XXX LUNBAS								
	94 SO	9D SO	941 NO	201 NO									
FBI 10	9A SO	9B SO	8A1 NO	8A1 NO		-							
<					4								
SELECT 9/	A NJA NO1	NO CAT:	3 THU 12										

9A NO may be dragged to FRI 2 and 9B SL may be assigned on THU. We do this with 4 drag/drops and end up with:

TP 1- Tplan	- NYFIKSKOL	AN [322] [Re	gistered version			x
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts	F <u>u</u> nctions C	<u>o</u> ntrol <u>R</u> un <u>I</u>	<u>l</u> ainten	ance Com <u>p</u> ressed <u>H</u> elp	
) C	- H	nette e e e e e e e e e e e e e e e e e	
					Blacky, Device Compressed Selection	
School Tea	achers Teacr	her pools Clas	ses Rooms 5	plects	Blocks Feriods Steering Compressed Selection	
Selection	9B	BB	КК	^	Display kicked out activities 🛛 🚯 🗷	B
	SA SV				Display not laid activities	?
THU 7	9A SV				Display erased activities	X
THU 8	9B LUN9B				Display clased activities	
THU 9					Display parked activities	
<u>THU 10</u>	9A NO				Display special activities	
THU 11	9A NO	XXX LUNBB	XXX LUNKK			
THU 12	9B SL	9B SL	9B SL	Se	elect pos 🔻 🔂 🖪 F2 S	
		9B SL	9B SL			
THU 15	9A EN	7A EVAL		<u> </u>		
THU 16	9A EN	7A EVAL		(±)	• K) [273]: 9A BL	
THU 17		7A EVAL		±	-K)● [3/3]: 9A BL	
THU 18		7A EVAL				
FBI 1						
FRI 2	9A NO	9C SL	9C SL			
FRI 3	9A MA	9C SL	9C SL			
	SA MA	9C SL	9C SL			
FBL6						
FBI 7	9B LUN9B					
FRI 8	9B SO					
FRI 9	9B SO					
FRI 10	9B SO			-		
•			•			
SELECT 9B	KK SL1 SL	CAT: 3				

Next 9A BL:

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TP 1- Tplan	- NYFIKSKOL	AN [322] [Regist	ered version]
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts	F <u>u</u> nctions C <u>o</u> nti	rol <u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp
) 🕒 🗋 🤇) e vec	e e e e e e e e e e e e e e e e e e e
School Te	achers Teac	her pools Classes	Rooms Subjects Blocks Periods Steering Comp
Selection	9A	CL 🔺	Display kicked out activities
THU 10	9A NO		Display not laid activities
	3A NU		
THU 13		ZA BLHK	
THU 14		7A BLHK	Display parked activities
THU 15	9A EN		🔲 Display special activities 🛛 🔂 🔂 🔂
THU 16	9A EN		
THU 17			Select pos 🔻 🚽 🖪 F2 S
THU 18			
FRI 1			🖃 🔣 🜒 [1/3]: 9A BL
FRI 2	9A NO		9A BL CL B100
FRI 3	9A MA		⊞- K) [2/3]: 9A BL
FRI 4	9A MA		H R I 3/3 1 9A BL
FRI 5	SA MU		
FRI 7	9A HUM9A		
FBI 8	9A SO		
FBI 9	9A SO		
FBI 10	9A SO		
FBI 11	9A Tæ	XXX LUNCL	
FRI 12	9A Tæ		
FRI 13	9A SV		
FRI 14	9A SV		
FRI 15	9A SV	XXX HAGA	
FRI 16	9A EN	XXX HAGA	
FBI 17	9A EN	XXX HAGA	
FRI 18		XXX HAGA	
•		•	
SELECT 9/	A CL B100	BL CAT: 3	h.

If we could get rid of 9A EN in THU 16 we could assign 9A BL in THU 16-17-18. We could try that:

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T 1- Tplan - NYFIKSKOLAN [322] [Registered version]														
<u>Files Edit Formats Functions Control Run Maintenance Compressed Help</u>														
School Te	School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selection Full Text Tables Listings 🛀													
Selection	9A	9B	REN	SA	KAR	Display kinked out activities								
THU 11	9A NO	9A NO	XXX LUNREN		XXX LUNKAR									
THU 12		9B SL				Display not laid activities								
THU 13		9B SL	8A1 SV	8A1 SV		📃 Display erased activities 🛛 🗙 🗙 📉								
THU 14		9B SL	8A1 SV	8A1 SV		Display parked activities								
THU 15	9A EN	9A EN	9A EN	9A EN	9A EN	Display special activities								
<u>THU 16</u>	9A EN	9A EN	9A EN	9A EN	9A EN									
THU 17														
<u>THU 18</u>						Select pos 🔻 🔤 🚹 F2 S								
FBI 1														
FRI 2	9A NO	9A NO												
FRI 3	9A MA	9A MA	8A1 EN	8A1 EN	8A1 EN	9A BL CL B100								
FRI 4	9A MA	9A MA	8A1EN	8A1 EN	8A1 EN	(h−K) [2/3]: 9A BL								
FRI 5	SA MU		7A EN	7A EN	7A EN	1 3/3 1 94 BL								
FRI 6	SA MU		7A EN	7A EN	7A EN									
	SA LUNSA	3B LUNSB	7A SPHK	AAA LUNSA	7A SPBK									
	3A 50	3D 3U												
FRI 10	94 50	98.50			YYY LUNKAR									
FBI 11	94 Tæ	94 Ta												
FBI 12	9A Tæ	9A Tæ												
FBI 13	9A SY	9A SY	9A SY	9A SY										
FBI 14	9A SV	9A SY	9A SV	9A SV										
FRI 15	9A SV	9A SV	9A SV	9A SV										
FRI 16	9A EN	9A EN	9A EN	9A EN	9A EN									
FBI 17	9A EN	9A EN	9A EN	9A EN	9A EN									
FRI 18					-									
•					•									
SELECT 9/	A KAR SV3	EN CAT: 3	THU 16											

We could move 9A EN to FRI 18 (as a triple) and assign 9A BL on THU. We do this with 4 drag/drops and end up with:

TP 1- Tplan	- NYFIKSKOL	AN [322] [Re	gistered vers	ion								
<u>Files</u> <u>E</u> dit	Form <u>a</u> ts	F <u>u</u> nctions C	<u>o</u> ntrol <u>R</u> un	N	<u>l</u> aintenance Com <u>p</u> ressed <u>H</u> elp							
School Te	achers Teac	her pools Clas	ses Rooms	Su	bjects Blocks Periods Steering Compressed Select							
Selection	9A	CL	B100		Display kicked out activities							
THU 10	9A NO											
THU 11	9A NO	7A BLHK	7A BLHK		Display not laid activities							
THU 12		7A BLHK	7A BLHK		🔲 Display erased activities 🛛 🗙 📉							
THU 13		7A BLHK	7A BLHK		Display parked activities							
THU 14		7A BLHK	7A BLHK									
THU 15	9A EN											
THU 16	9A BL	9A BL	9A BL									
THU 17	SA BL	9A BL	9A BL		Select pos 🔻 🔤 🖪 F2 S							
<u>THU 18</u>	9A BL	9A BL	9A BL									
FRI 1			•									
FRI 2	9A NO											
FRI 3	9A MA											
FRI 4	SA MA											
FRIS												
	SA CONSA											
FRI9	94 50											
FBI 10	9A SO											
FBI 11	9A Tæ	XXX LUNCL										
FBI 12	9A Tæ											
FRI 13	9A SV											
FBI 14	9A SV											
FBI 15	9A SV	XXX HAGA	XXX HAGA									
FRI 16	9A EN	XXX HAGA	XXX HAGA									
FBI 17	9A EN	XXX HAGA	XXX HAGA	Ŧ								
•			•									
SELECT 9A	CL B100 B	L CAT: 3										

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I hope this shows the general idea. I am not too proud of this example since I am still stuck with 2 single 20-min modules and further work may be needed.

6.4 Some advanced facilities

Preamble: The facilities mentioned here assume that you have some experience with using Tplan; in particular that you are familiar with the timetabling problems mentioned here. These notes are just some "emergency aid". Due to lack of time, I cannot do more for the moment.

6.4.1 Component setting

The traditional way of defining this mechanism is:

. A Line (Stream) consists of a set of components. In their turn these consist of a set of unique class groups. These groups must **then** be entered in the class register according to some strict rules. Activities (subjects) are then assigned to these classes. The vital component condition is then: **Class groups belonging to different components in a LINE may NEVER be assigned to the same time period while class groups belonging to the SAME component may be assigned to the SAME time period if no other conflicts.**

An alternative way of formulating the same timetabling requirement is as follows:

• A Line (Stream) consists of a set of class groups. These groups are included in activities (subjects) just as traditional classes. However, these activities are given a component property specifying to which Line and which component where it belongs. The vital component condition is then: Activities belonging to the same LINE but different components here may NEVER be assigned to the same time period while activities also having the SAME line + component property may be assigned to the SAME period if no other conflicts

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Î	TP 1- Tpl	an - St C	uthbert	's [CC2]	Regist.			x	From a mathematical (and also practical)
ſ	Files Ec	dit For	m <u>a</u> ts	- F <u>u</u> nctio	ns C <u>o</u> nt	rol <u>R</u> u	ın		point of view these definitions are
	Mainten	ance H	lelp	-	_	-			identical. The first case is documented in
		Ľ) 🕒) e (<u>%</u>	1=	n	Ð	the second method for defining
	School	Teacher	s Teac	her pool:	; Classes	Room	s Sub	4 >	components.
	×	Class	New	Sec-	Compo-	Year	Posi-		To use this method you must as a start
	×	name	name	tor	nent		tions	1	use a special run option for that . Till
	00044	5G	5G			5	50		further notice we will allow both methods
	00045	64A	6AA			6	40		for defining components.
	00046	6AB	6AB			6	40		You check the new run option. New
	00047	6AC	6AC			6	40		component rules to use the alternative
	00048	6AD	6AD			6	40		data specification. Your class register will
	00049	6AE	6AE			6	40		then look like the following this figure
	00050	6AF	6AF			6	40		then look like the following this lighte
	00051	6AG	6AG			6	40		This is all classes if you have components
	00052	6AH	6AH			6	40		in form 6 and 7. You only have as many
	00053	6AI	6AI			6	17		class symbols as the maximum number
	00054	6AJ	6AJ			6	9		of class groups in the various
	00055	7AA	7AA			7	42		components. Notice further that you
	00056	7AB	7AB			7	42		don't use the Component column and in
	00057	7AC	7AC			7	42		the column Positions you enter the sum
	00058	7AD	7AD			7	42		of periods linked to the various class
	00059	7AE	7AE			7	42		symbols
	00060	7AF	7AF			7	42		
	00061	7AG	7AG			7	42		The data entry in the subject register will
	00062	7AH	7AH			7	32		look like the next figure. Notice here the
	00063	7AI	7AI			7	24	Ψ.	column Belongs to block (To be
	<						1		substituted with the heading:
						Component).			

This is more or less the same as the Component column in class register with the earlier method. Instead of stating that sets of class symbols belongs to different components, we are now saying to which component the individual activity belongs. The obvious advantage of this convention that you get rid of the vast number of class symbols using older conventions. Furthermore you are rid of all rigid rules of the relative order of these class symbols. You are allowed to enter component – activities in any way you like in subject register as long as you remember to link the subject to the proper component. There is however a small new restriction with the new rules and that is shown in the figure: Class 6AA has the subject PH belonging to component Y61. Further down you see that class symbol 6AA is getting the subject PH once more but now it is in the Y62 component. Tplan as a whole require that different subjects have different identifiers; accordingly you are "forced" to use the names PH1 and Ph1 for the Y62- subject. I believe this is a small price to pay for having much simpler conventions. Besides the error checking in Tplan easily detects use of same name for different subjects.(Use Inspect button)

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TP 1- Tplan	📭 1- Tplan - St Cuthbert's [CC2] [Registered version]											
<u>F</u> iles <u>E</u> dit	Form <u>a</u> t	ts F <u>u</u> no	ctions C <u>o</u> ntr	ol <u>R</u> un <u>M</u>	laintenance	e <u>H</u> elp						
) 🖻 🗖		à 🔏 🖻 🛍		∍₩₽) (I) (II (II (II (II (II (II (II (II (I		×				
School Te	eachers 1	leacher p	ools Classes	Rooms Sut	ojects Bloc	ks Periods	Steering	Compres	sed Full T	ext Tables Lis	tings Various	
	Class	ACT-	Subject-	Periods	Period	Teacher	Room	Class	Class	Full name	Belongs to	
	CLA +	Name	Name		B'down	+	+	CLB +	CLC +		block	1
00709	6AA	Ep	Ep	2		TR		6AB	6AG	12 Ep	Y61	1
00710			Ep			DM		6AC	6AH	12 Ep		1
00711			Ep			BA		6AD		12 Ep		1
00712			Ep			JHA		6AE		12 Ep		
00713			Ep			AK		6AF		12 Ep		
00714			Ep			MC				12 Ep		
00715			Ep			NM				12 Ep		
00716	6AA	PH	PH	5		PR	LAS			12 PH	Y61	
00717	6AA	Ph	Ph	4		ACO	LA7			12 Ph	Y61	
00718	6AB	HI	HI	5		IL	10			12 HI	Y61	
00719	6AB	Hi	Hi	4		MD	10			12 Hi	Y61	
00720	6AC	TE	TE	4		RH	TE2			12 TE	Y61	
00721	6AC	Te	Те	5		JL	TE2			12 Te	Y61	
00722	6AD	BI	BI	5		IR	LA3			12 BI	Y61	
00723	6AD	Bi	Bi	4		JB	ANYS			12 Bi	Y61	
00724	6AE	FR	FR	4		CK				12 FR	Y61	
00725	6AE	Fr	Fr	5		AK				12 Fr	Y61	
00726	6AF	EC	EC	9		AC				12 EC	Y61	
00727	6AG	GE	GE	9		JC	LA4			12 GE	Y61	
00728	6AH	SC	SC	3		EP	LA6B			12 SC	Y61	
00729	6AH	Sc	Sc	3		MH	LA6B			12 Sc	Y61	
00730	6AH	SC	SC	3		JLA	LA6B			12 sc	Y61	
00731	6AA	PH1	PH1	4		PR	LA8			12 Phy	Y62	
00732	6AA	Ph1	Ph1	5		ACO	LA7			12 Ph	Y62	
00733	6AB	MA	MA	4		IH				12 MA	Y62	T
											•	

Next figure shows a further advantage by using new conventions:

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TP 1- Tpla	an - St Cuthbert's	[CC2] [Registered	d version]		100		-				
Files Ed	lit Formats Fu	nctions Control	Run Maintena	nce Compressed	l Help						
	D 🖻 🖬 🔍	A y b (2)					8		• •• •		
School '	Teachers Teacher	pools Classes R	looms Subjects E	Blocks Periods SI	eering Compress	ed Table Full Text	Tables Listings \	arious			
Table	6AA	6AB	6AC	6AD	6AE	6AF	6AG	6AH	6AI	6AJ	Display kicked out activities
MON 1	6AA Ch MHA LA6	6AB IL AK	6AC EL DM	6AD TH PCL	6AE De LF	6AF BS AC	6AG Fm KS	6AH PY LC	6ALSC MH LA1		Display Ricked out activities
MON 2 MON 3	6AA CH TH LA6A	6AB II ST 6AB HI MD 10	6AC EI JDO	6AD TH NMC	6AE DE JHA	6AF Bs JP	6AG FM IH	6AH PY LC	6AI se SL LA1		Display not laid activities
MON 4	6AA Ph ACO LAS	6AB HI IL 10	6AC Te JL TE2	VAD DI IT LAS	UNLINCK		UNG GE UC ENT	CAN SO EF LAOD			Display eraked activities
MON 5		6AB Bi EP LA3		6AD EI KP	6AE FRI MC		6AG IT SA IT6	6AH MA2 TR 4			Display parked activities
TUE 1											- Display special activities
TUE 2	6AA Ph ACU LA7	GAB HI IL 10	SAC EL DM	6AD BI IR LA3	GAE Fr AK	6AF EC AC	6AG GE JC LA4	6AH SC JLA LA6B	CALCA JP LACP		Select nos 🔻 🔲 🗖 🖬 😭
TUE 4	6AA Ma MV	6AB BI IR LAS	6AC Gg LMC	6AD EI KP	6AE FRI MC	6AF EN BA	6AG IT SA IT6	6AH MA2 TR 4	OAT SC OD LAOD	6AJ IT PV IT5	
TUE 5	6AA Phi ACO LAS	6AB Ma AA	6AC EN BA	6AD AR JS AR3	6AE SS MTU	6AF It TS IT4	6AG Ch CV LA6A	6AH AA JEA AR2			
VED 1	6AA Ph1 ACO LA7	6AB MA IH	6AC EN BA	6AD AR JS AR3	6AE SS MTU	6AF It TS IT4	6AG Ch CV LA6A	6AH AA JEA AR2			. ⊞ 🔣 [1/1]: 3A TE
VED 2	6AA PH PR LA8	6AB HI IL 10	6AC Te JL TE2	6AD Bi JB LA2	6AE Fr AK	6AF EC AC	6AG GE JC LA4	6AH se JLA LA6B		A	📄 🔣 🛛 [1/1]: 3E SC3
VED 4	6AA MA KS	6AB BIEP LAZ	SAC GG PC	GAD EL UM	GAE FRIMC	CAA EP	6AG IT GL 116	6AH MAZ IH 4	6AI Aa PMG AH5	6AJTI PWTI5	3E SC3 MH LA7 "9UTH
VED 5	6AA Ep TR	6AA Ep DM	6AA Ep BA	6AA Ep JHA	6AA Ep AK	6AA Ep MC	6AA Ep NM	6AA Ep			3E SC3 MHA LA1 "9UTH
THU 1	6AA PH PR LA8	6AB Hi MD 10	6AC TE RH TE2	6AD BI IR LA11	6AE FR CK	6AF EC AC	6AG GE JC LA4	6AH SC EP LA6B			3E SC3 JB LA5 "9UTH S
THU 2	6AA PHI PR LA9	6AB Ma AA	6AC En DST	6AD AR JS AR3	6AE Ss NM	6AF It TS IT4	6AG CH TH LA6A	6AH AA JEA ARI			
THU 3	6AA Ch MHA LA6	6AB IL AK	6AC EL DM	6AD TH PCL	6AE De LF	6AF BS AC	6AG FM IH	6AH PY LC	6AI Sc JB LA6B		🗄 🚯 🛛 [1/1]: 4AA Bi
THU 4	-					CAE EN DA	CAC IN CLUTC	CALL MA2 TO 4			🗄 🚯 🐠 [1/1]: 5AC Ph
FBL1	SAA MA KS	64B Bi FP I 43	SAC 66 PC	SAD FLKP	SAF ERIMC		FAG IT SA ITS	00111402 1114		SALIT PM ITS	🖪 🕀 💽 🚺 🕹 🚺 🕹 🕹 🚺 🕹
FBI 2	6AA Ma MV	6AB BI IR LAT	6AC Gg LMC	6AD EL DM	6AE Fr1 ST	6AF En DST	Undit Undition	6AH MA2 TR 4	6AI AA MS AR5	6AJ It SA IT5	
FRI 3	6AA PH PR LA8	6AB HI IL 10	6AC TE RH TE2	6AD BI IR LA3	6AE Fr AK	6AF EC AC	6AG GE JC LA4	6AH SC EP LA6B			• R) [1/1]: 7AE Fr1
FBI4	6AA Phi ACO LA7	6AB Ma AA	6AC EN BA	6AD AR JS AR3	6AE SS MTU	6AF IT P¥ IT5	6AG Ch CV LA6A	6AH AA JEA AR2			• • • • • • • • • • • • • • • • • • •
FRI 5		6AB Hi MD 10	6AC Te JL TE2	6AD Bi JB LA3	6AE FR CK			6AH Sc MH LA6B			
mon 1	6AA CH MHA LA6	AD IL AK	6AC EL UM	6AU TH PUL	6AE DE INA	6AF BS JP	6AG FM IH	6AH PY LC	6ALCO SLLAGE		-
mon 3	CAA CH TH LAGA	00011-01	UNC EI UDO	OAD THINNE	ONE DE OTIN	WAP DO AC	ond Fill Ko	CATTELE	ONI SU DE LAT		
mon 4	6AA PHI PR LA9	6AB Ma AA	6AC En DST	6AD AR JS AR3	6AE Ss NM	6AF It TS IT4	6AG CH TH LA6A	6AH AA JEA AR2			1
mon 5	6AA Ph ACO LA7		6AC TE RH TE2		6AE FR CK	6AF EC AC	6AG GE JC LA4	6AH Sc MH LA6B			
tue 1	6AA PH PR LA8	6AB HI IL 10		6AD Bi JB LA3	6AE Fr AK	6AF EC AC	6AG GE JC LA4	6AH Sc MH LA6B			-
tue 2	6AA PHI PH LAS	6AB Ma AA 66B II 6K	6AC EL IDO	6AU AR JS AR3	6AE SS NM	6AF II P¥ II5	6AG CH TH LA6A	6AH AA JEA AHZ	641 co SL L 411		-
tue 4	6AA Ma MV	6AB BI EP LA3	6AC GG PC	WHO TH MINE	6AE FRI MC	6AF EN BA	or all thinks	6AH MA2 TR 4	6AI Aa PMG AR5		
tue 5			6AC Gg LMC			6AF En DST			6AI AA MS AR5	6AJ It SA IT5	1
wed 1											_
wed 2	6AA Ph1 ACO LA7	6AB MA IH	6AC EN BA	6AD AR JS AR3	6AE Ss NM	6AF IT PV IT5	6AG Ch CV LA6A	6AH AA JEA ARI		AA LIT DUUTE	
wed 3	6AA MA KS	6AB BUILLAT	6AC GG PC	6AD EL UM	6AE FRIMC	6AF EN UST	6AG II SA II'6	6AH MAZ TH 4		6AJTEPW115	4
wed 5	6AA Ep TR	6AA Ep DM	6AA Ep BA	6AA Ep JHA	6AA Ep AK	6AA Ep MC	6AA Ep NM	6AA Ep			
thu 1	6AA Ma MV	6AB BI IR LA6B		6AD EI KP		6AF En DST	6AG It GL IT6	6AH MA2 TR 4	6AI AA MS AR5	6AJ It SA IT5	
thu 2	6AA PHI PR LA8	6AB MA IH	6AC EN BA	6AD AR JS AR3	6AE SS MTU	6AF IT PV IT5	6AG CH TH LA6A	6AH AA JEA AR2			~
thu 3	6AA CH TH LA6A	6AB IL AK	6AC EL DM	6AD TH NMC	6AE DE JHA	6AF BS AC	6AG Fm KS	6AH PY LC	6ALSC MH LA1		-
thu 5	BAA Ph ACULA7	6AB HI MU 10	6AC TE BH TE2	6AD BEIR LA3	BAE FLAK	6AF EC AC	6AG GE JU LA4	6AH SC JLA LA6B			
fri 1	6AA Ma MV	6AB BUB LA1	FAC GG PC	6AD ELKP	6AE EBI MC		6AG IT SA ITS	6AH MA2 TB 4	6ALAA MS AR5	6AJ IT PV IT5	1
fri 2	6AA MA KS		6AC Gg LMC	6AD EL DM	6AE Fr1 ST	6AF EN BA	6AG It GL IT6		6AI Aa PMG AR5	6AJ It SA IT5	
fri 3	6AA CH TH LA6A	6AB IL AK	6AC EI JDO	6AD Th NMC	6AE DE JHA	6AF Bs JP	6AG FM IH	6AH PY LC	6ALSC MH LA1		-
fri 4	6AA Ph1 ACO LAS	6AB MA IH	6AC En DST	6AD AR JS AR3	6AE SS MTU	6AF IT PW IT5	6AG Ch CV LA6A	6AH AA JEA AR5			-
HT 5			6AC TE JL TE2			6AF EC AC	6AG GE JU LA4		<u> </u>		·
•										4	
MAIN DR	OGRAM COMPLET	TED									

All subjects belonging to 6AA is nicely ordered in the same column as for all other component classes. With the older rules you had much less control over which subjects were allocated to the same column. To the right in the figure we have the Kickout list and we shall do a few adjustments:

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TP 1- Tplan	- St Cuthbert's [CC2]	[Regis	stered v	rersion]
<u>F</u> iles <u>E</u> dit	Formats Function	s C <u>o</u> i	ntrol	<u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp
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School Tea	achers Teacher pools	Classe	es Roo	oms Subjects Blocks Periods Steering Compressed 🔹 🕨
Selection	7AA	KS	MV	Display kicked out activities
MON 1	7AA Ph PR LA7	6AG	444	Display not laid activities
MON 2	7AA MA MY	ZAG	5E	
MON 4		5AA	5AA	
MON 5	7AA PH ACO LA10			Display parked activities
TUE 1	7AA PH ACO LA7		4AA	
TUE 2	7AA MA KS	7AA		
TUE 3	7AA Ph1 PR LA7	6AG	5E	Select pos 🔻 🔜 🖪 📔
TUE 5	7AA Ma MV	7AH	744	
VED 1	7AA MA KS	788		
VED 2	7AA PHI ACO LA7	5AA	5AA	
VED 3	7AA Ph PR LA7	6AA		
VED 4		7AH	4AA	
VED 5			2E	
THU 1	7AA CH MHA LA7	7AG	4AA	
THU 2	7AA PHI ACU LA7		ZE 2E	
THU 4	7AA Ch TH LA6A	5AA	5AA	
THU 5	7AA Ph PR LA7			
FBI 1	7AA Ph PR LA8	6AA	4AA	E ⊕ • K [1/1]: 5F Op5
FRI 2		7AH	6AA	📕 🕀 🚯 🗕 [1/1]: 7AA MA
FRI 3	7AA PHI ACO LA10	5AA	5AA	E 🕀 🚯 🚺 🛛 🖸 🕹 🗛
FRI 4	7AA CH MHA LA5		7.0.0	
FRI 5	7AA Ma M¥	740	788	
mon 1 mon 2		6AG	56	
mon 3	7AA PH ACO LA7	0112	4AA	
mon 4	7AA Ma MV	7AH	788	
mon 5		5AA	5AA	
tue 1	7AA CH MHA LA7	7AG	5E	
tue 2	7AA Ma MV	0.1.0	788	
tue 3	TAA PH PR LAT	6AG	4AA	
tue 5	7AA Ch TH LA6A		OAA	
wed 1	7AA PH ACO LA7		5E	
wed 2	7AA MA KS	7AA		
wed 3	7AA EP BA	6AA	7AA	
wed 4	7AA PHI ACO LA8	5AA	5AA	
wed 5			2E	
thu 1	7AA PHI ACO LA8		6AA	
thu 3	7AA Phi PR LA7	6AG.	2E	
thu 4		5AA	5AA	
thu 5				
fri 1	7AA PH ACO LA7		6AA	
fri 2	7AA Ph1 PR LA7	6AA	5E	
fri 3	7AA Ma MV	7AH	744	
fri 5			7AA 2E	
ms	TAA UN TH LA6A		26	
SELECT 7/	AA KS MA CAT	Г: 4		

In this situation we want to assign 7AA MA and select that to use P4 and as Category we use: Pure Class act. The figure above then shows the 7AA column and the two teachers in Y73- act. (I.e. yellow brown cells) The possible periods are: WED 4, FRI 2 and thu 4. Both actual teachers are occupied in these positions. Normally it is "impossible" to free these teachers in these periods and some compromise must be done. We notice that KS is teaching 7AH in MA in WED 4 and FRI 2. Perhaps he could teach both groups for one period? We select that compromise like this:

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Files Edit Formats Functions Control Run Maintenance Compressed Help School Teachers	TP 1- Tplan	- St Cuthbert's [CC2]	[Regis	tered ve	ersion]	
School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Compressed Selectic (*) Selection TAA KS KS MV TAA Display kicked out activities Periods Steering Compressed Selectic (*) Selection TAA PH PACLATZ KS KS MV TAA Display not laid activities Pipplay not laid activities	<u>F</u> iles <u>E</u> dit	Formats Function	s C <u>o</u> n	ntrol <u>F</u>	<u>R</u> un <u>M</u>	aintenance Com <u>p</u> ressed <u>H</u> elp
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mon 3TAA PH ACU LAT4AAmon 4TAA Ma MWTAHTAAmon 55AA5AA5AAtue 1TAA CH MHA LATTAG5Etue 2TAA Ma MWTAAtue 3TAA Ph PB LATGAGtue 46AAtue 5TAA Ch TH LAGA6AAtue 5TAA PH ACO LAT5Ewed 1TAA PH ACO LAT5Ewed 2TAA Ma KSTAAwed 3TAA EP BAGAAwed 4TAA PH1 ACO LAS5AAtuu 2TAA PH1 ACO LAS5AAwed 52Ethu 1TAA PH1 ACO LAS6AAthu 2TAA CH MHA LAT1thu 3TAA Ph1 PB LAT6AGthu 45AA5AAthu 511thu 511thu 511thu 511thu 61thu 7TAA Ph1 PB LAT6AAthu 7TAA Ph1 PB LAT6AAthu 511thu 611thu 7TAA Ph1 PB LAT6AAthu 7TAA Ph1 PB LAT6AAtri 1TAA PB PB7tri 1TAA PB PB7tri 2TAA PB7tri 4TAA Ch TH LAGA2E	mon 2	7AA Ph1 PR LA7	6AG		5E	
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tue 1 7AA CH MHA LA7 7AG 5E tue 2 7AA Ma MV 7AA tue 3 7AA Ph PR LA7 6AG 4AA tue 4 6AA 6AA tue 5 7AA Ch TH LASA 9 wed 1 7AA PH ACO LA7 5E wed 2 7AA APH ACO LA7 5E wed 3 7AA PB A 6AA wed 4 7AA PHI ACO LA8 5AA wed 5 2E 2E thu 1 7AA PHI ACO LA8 6AA thu 2 7AA PHI ACO LA8 6AA thu 2 7AA PHI ACO LA8 6AA fri 1 7AA PHI PR LA7 6AA fri 1 7AA PHI PR LA7 6AA fri 1 7AA PHI PR LA7 6AA fri 2 7AA PHI PR LA7 6AA fri 3 7AA PH PR LA7 6AA fri 4 7AA PH PR LA7 6AA fri 5 7AA Ch TH LA6A 2E	mon 5		5AA		5AA	
tue 2 7AA Ma MW 7AA tue 3 7AA Ph PB LA7 8AG 4AA tue 4 6AA 6AA tue 5 7AA Ch TH LA6A 5E wed 1 7AA PH ACO LA7 5E wed 2 7AA MA KS 7AA wed 3 7AA EP BA 6AA wed 4 7AA PH1 ACO LA8 5AA wed 5 2E 2E thu 1 7AA PH1 ACO LA8 6AA thu 2 7AA CH MHA LA7 2E thu 3 7AA Ph1 PR LA7 6AA fri 1 7AA PH ACO LA7 6AA fri 2 7AA Ph1 PR LA7 6AA fri 2 7AA Ph1 PR LA7 6AA fri 4 7AA Ch TH LA6A 2E fri 4 7AA Ph1 PR LA7 6AA fri 5 7AA Ch TH LA6A 2E	tue 1	7AA CH MHA LAZ	7AG		5E	
tue 3TAA Ph PR LA7GAG4AAtue 46AAtue 5TAA Ch TH LAGAwed 1TAA PH ACO LA7wed 2TAA MA KSTAA PH ACO LA7wed 3TAA EP BAGAATAAwed 4TAA PH1 ACO LA8SAASAAwed 5Lhu 1TAA PH1 ACO LA8SAA<	tue 2	7AA Ma MV			7AA	
tue 46AAtue 57AA Ch TH LA6A5Ewed 17AA PH ACO LA75Ewed 27AA MA KS7AAwed 37AA EP BA6AAwed 47AA PH1 ACO LA85AAwed 52Ethu 17AA PH1 ACO LA86AAthu 27AA CH MHA LA72Ethu 37AA Ph1 PR LA76AGfri 17AA Ph1 PR LA76AGfri 27AA Ph1 PR LA76AAfri 47AA Ph1 PR LA76AAfri 57AA Ch TH LA6A2E	tue 3	7AA Ph PR LA7	6AG		4AA	
tue 5TAA Ch TH LAGAwed 1TAA PH ACO LATSEwed 2TAA MA KSTAAwed 3TAA EP BAGAAwed 4TAA PHI ACO LASSAAwed 52Ethu 1TAA PHI ACO LASGAAthu 2TAA PHI ACO LASGAAthu 3TAA PHI PR LATGAAthu 4SAASAAthu 5Efri 1TAA PH ACO LATGAAfri 3TAA PH ACO LATGAAfri 4TAA PH ACO LATGAAfri 5TAA Ch TH LAGAZE	tue 4				6AA	
ved 17AA PH ACO LA75Eved 27AA MA KS7AAved 37AA EP BA6AAved 47AA PHI ACO LA85AAved 52Ethu 17AA PHI ACO LA86AAthu 27AA CH MHA LA72Ethu 37AA PhI PR LA76AGthu 45AA5AAthu 52fri 17AA PH ACO LA76AAfri 27AA PH PR LA76AAfri 37AA Ma MW7AHfri 47AA EP BA7AAfri 57AA Ch TH LA6A2E	tue 5	7AA Ch TH LA6A				
Wed 2TAA MA KSTAAwed 3TAA EP BA6AATAAwed 4TAA PHI ACO LAS5AA5AAwed 52E2Ethu 1TAA PHI ACO LAS6AAthu 2TAA CH MHA LAT2Ethu 3TAA PHI PR LAT6AAthu 45AA5AAthu 52fri 1TAA PH ACO LAT6AAfri 2TAA PA PH PR LAT6AAfri 3TAA Ma MWTAHfri 4TAA EP BATAAfri 5TAA Ch TH LAGA2E	wed 1	7AA PH ACO LA7	7.4.4		5E	
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wed 5 2E thu 1 7AA PH1 ACO LA8 6AA thu 2 7AA CH MHA LA7 2 thu 3 7AA Ph1 PR LA7 6AG thu 4 5AA 5AA thu 5 2 fri 1 7AA Ph1 PR LA7 6AA fri 2 7AA Ph1 PR LA7 6AA fri 3 7AA Ma MW 7AH fri 4 7AA EP BA 7AA fri 5 7AA Ch TH LA6A 2E	wed 4	7AA PHI ACO LA8	5AA		5AA	
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thu 27AA CH MHA LA7Image: Constraint of the systemthu 37AA Ph PB LA76AG2Ethu 45AA5AAthu 55AA5AAfri 17AA PH ACO LA76AAfri 27AA Ph PB LA76AAfri 37AA Ma MW7AHfri 47AA EP BA7AAfri 57AA Ch TH LA6A2E	thu 1	7AA PHI ACO LA8			6AA	
thu 37AA Ph1 PB LA76AG2Ethu 45AA5AAthu 56AAfri 17AA PH ACO LA76AAfri 27AA Ph1 PB LA76AAfri 37AA Ma MV7AHfri 47AA EP BA7AAfri 57AA Ch TH LA6A2E	thu 2	7AA CH MHA LA7				
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rnu sfri 17AA PH ACO LA76AAfri 27AA Ph1 PR LA76AAfri 37AA Ma MV7AHfri 47AA EP BA7AAfri 57AA Ch TH LA6A2E	thu 4		5AA		5AA	
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Int 2 Foo Full Po Lor 900 9E fri 3 7AA Ma MV 7AH 7AA fri 4 7AA EP BA 7AA fri 5 7AA Ch TH LAGA 2E	fri 1 fri 2	7AA PH ACO LA7	644		6AA	
fri 4 7AA 7AA fri 5 7AA Ch TH LAGA 2E	fri 3	7AA Ma M¥	7AH		788	
Fri 5 7AA Ch TH LAGA 2E	fri 4	7AA EP BA			788	
	fri 5	7AA Ch TH LA6A			2E	
SELECT TAAKS MA CAT-A	SELECT 74		· 4			

The above figure is created by one P1- drag and then blowing up (F5). Next we select 7AE Fr1 (Pure class) and get this selection:

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TP 1- Tplan	- St Cuthbert's	[CC2]	[Registe	red version]
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts F <u>u</u>	nctions	C <u>o</u> ntr	ol <u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp
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School Te	achers Teache	r pools	Classes	Rooms Subjects Blocks Periods Steering Compressed Selectic
Selection	7AE	CHE	СК	Display kicked out activities
MON 1 MON 2	7AE Fr MC		74F	Display not laid activities
MON 3	7AE DE JHA	3C	6AE	Display erased activities
MON 4	7AE SS MTU	4AA	4AA	
MON 5	7AE FR CK		7AE	Display special activities
	7AE Fr MC		745	
TUE 3	7AE Ss NM		TAE	Select pos 🗸 📃 🖪 F2 S
TUE 4	7AE DE JHA		3H	
TUE 5			5AA	
VED 1	7AE FRI CK	_	7AE	⊕ <mark>₪</mark> [1/1]: 3A TE
VED 2	TAE SS NM		3H 500	⊕ K
VED 4	7AE Fr1 CHE	7AE	0111	⊞ <mark>B</mark> [1/1]: 4AD CH
VED 5	7AE SS MTU	3C		⊞ K [1/1]: 4AA Bi
THU 1	7AE DE JHA		6AE	
THU 2	7AE SS MTU	444	4AA	
THU 4	7AE De LE	7AB	эп	
THU 5	7AE Fr MC		5AA	
FBI 1	7AE FR CK		7AE	
FRI 2	7AE FRI CK		7AE	
FRI 3	7AE SS MTU		FAA	
FBI 5			6AE	
mon 1	7AE DE JHA	7AB		
mon 2	7AE SS MTU			
mon 3	7AE Fr MC			
mon 4		444	4AA 6.0 E	
tue 1	7AE De LE	ZAB		
tue 2	7AE Fr1 CHE	7AE		
tue 3	7AE FR CK	3C	7AE	
tue 4	7AE Ss NM			
Med 1	TAE DE JHA		745	
wed 2	7AE FRI CK		7AE	
wed 3	7AA EP MV		5AA	
wed 4	7AE Ss NM			
wed 5			10.0	
thu 2		4AA	4AA	
thu 3				
thu 4	7AE Fr1 CHE	7AE		
thu 5	7AE Fr MC			
fri 1 Gri 2	7AE FR CK	3C	7AE	
fri 3	7AE 55 NM	7AE	3H	
fri 4	7AA EP MV	4AA	4AA	
fri 5	7AE DE JHA			
OK				
UK				

FRI 5 should be dark green in this figure and 7AE Fr1 may directly be assigned here. (The subject is probably lacking a suitable room to be found later.). Next we investigate 7AG TM and get this selection:

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TP 1- Tplan	- St Cuthbert's [C	C2] [Re	egistered	versio	on]		-			
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) []					1
School Tea	achers Teacher p	ools Cla	asses Ro	oms	Subjects	Blocks	Periods Steering	Compr	essed Sel	ection 🚺
Selection	7AG	KS		rr İ	TR	📝 Dieplau	kicked out activit	iec		
MON 1		6AG		FAA		Display		163		222
MON 2	7AG it1 PV IT6	-		7AH		Display	not laid activities			
MON 3	7AG Fm KS	7AG		bE		Display	erased activities			
MON 5		SAA		ан Сан		📃 Display	parked activities			PPP
	7AG GE JC LAA			100		📃 Display	special activities			555
TUE 2	7AG It1 TS IT5	7AA		7AH						
TUE 3	7AG It TS IT4	6AG		5E		Select	pos 🔻 📃	F 2	S	
TUE 4	7AG Fm KS	7AG	6	6AH						
TUE 5	7AG IT1 GL IT6	7AH				K	[1/1]: 16 IT			
VED 1		788	7	7AH		E K	[1/1]: 3A TE			
VED 2	7AG IT PV IT6	5AA	5	5AA			[1/1]: 3E SC	3		
VED 3	7AG GE JC LA4	6AA	6	6AH			[1/1]: 4AD (H		
VED 4	7AG IN 1S ITS	7AH		AA			[1/1]: 466 B			
VED 5		70.0		БАА			[1/1], 56C D			
	7AG Fm KS	7AG		AA			[171]. 3AC F	<u>n</u>		
	7AGH F¥116					⊞ <mark>K)</mark>	LIVE I: DF UP	2		
THU 4	7AG EM TB	5AA		5AA	7AG					
THU 5	7AG GE JC LA4		6	6AH						
FBI 1	7AG GE JC LA4	6AA		AA						
FBI 2	7AG It1 TS IT4	7AA	7AH 6	6AH						
FRI 3	7AG IT PV IT6	5AA		5AA						
FBI 4	7AG FM TR		7	7AG						
FRI 5	7AG IT1 GL IT4		7	7AH						
<u>mon 1</u>	7AG Fm KS	7AG								
mon 2	7AG It TS IT4	6AG		5E						
<u>mon 3</u>	7AG GE JC LA4	7411		AA						
mon 4	7AG ICI P V II 6	500		500						
tue 1	74G Em KS	746		SE						
tue 2	7AG IT1 GL IT4	11414		7AH						
tue 3	7AG GE JC LA4	6AG		AA						
tue 4	7AG It TS IT4		6	6AH						
tue 5	7AG FM TR		7	7AG						
wed 1	7AG GE JC LA4		5	5E						
wed 2		7AA								
wed 3	7AA EP	6AA	6	6AH						
wed 4	7AG It TS IT4	5AA		DAA						
wed 5	ZAC IT DU IT			PAR						
thu 1	7AGTI PV 114			AH						
thu 3	7AG It TS IT4	6AG		AG						
thu 4	7AG it1 PV IT6	5AA		5AA						
thu 5	7AG GE JC LA4									
fri 1	7AG GE JC LA4		6	6AH						
fri 2	7AG IT PV IT4	6AA		5E						
fri 3	7AG it1 PV IT6	7AH								
fri 4	7AA EP									
fri 5	7AG FM TR		7	/AG						
SELECT 7A	G TR FM	CAT: 4								

We must look for empty pink cells for 7AG. Those are found in THU 4 and mon 5. In both periods both KS and TR are in a option blocks in 5th form. (A not unfamiliar situation.) We must do a compromise and in the above figure we double assign TR in THU 4. Our kickout list has now been changed to:

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TP 1- Tplan	- St Cuthbert's [CC2] [I	Registered	_ 🗆 🗙								
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Table MON1 MON2 MON3 MON4 MON5 TUE1 TUE2 TUE3 TUE4 TUE5 VED1 VED2 VED3 VED4 VED5 THU1 TH12	✓ Display kicked out activitie ✓ Display not laid activitie ✓ Display erased activitie ✓ Display parked activitie ✓ Display special activitie MON 01 ✓ 𝔅 (1/1): 16 I ↔ 𝔅 (1/1): 3A I ↔ 𝔅 (1/1): 4AD ↔ 𝔅 (1/1): 5AC ↔ 𝔅 (1/1): 5F 0	ivities es es es es es EloatingPanel T E 5C3 C C H 5 B i C P h D p 5									

The compromises done till now is shown in LIANW:

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School Teachers Teacher pools Classes Rooms Subjects Blocks Periods Steering Comp									
LIANW - Manual errors and/or compromises	-)								
TEACHE DAY POSITION ACTIVITIES	*								
KS WEDNDAY 4 7AA MA 7AH Ma2 TR THURSDA 4 5AA MA 7AG FM									
WARNING (OR ERROR) FOR ACTIVITY: 6AH PY									
ACTIVITY HAS PER-LENGTH 2 ON: MONDAT ACTIVITY HAS PER-LENGTH 2 ON: monday									
WARNING (OR ERROR) FOR ACTIVITY: 7AA MA ACTIVITY HAS SEVERAL PER. ON: WEDNDAY 4									
	▼								

The double assignments here is the result of our drag/drop while the double period in 6AH is caused by presassignment in period register. To sort out remaining kickouts we could either start with pure class act. in form 4-5 or blocks in form 3. I prefer the latter. I start with 3E SC3 and get the following selection. (Category: Only activity):

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TP 1- Tplan	- St Cu	thbert'	s [CC2]	[Regi	stered v	version]	
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School Tex	achers	Teach					iects Blocks Periods Steering Compressed Selection
Coloction	іопоі	lan	lec				
MON 1	EN	EN	EN	6AI	6AA	7AD	Display kicked out activities
MON 2	MA	MA	RE	1A		7AB	Display not laid activities
MON 3	RE	IT	GG		7AA	5AD	🔲 Display erased activities 🛛 📉 📉 📉
MON 5	SU1 TE	TE	SU1	3E	3E 3C	3E 5G	🔲 Display parked activities 🛛 🕑 🕑 🕑
TUE 1	GG	AR	RE	5E		7AD	🔲 Display special activities 🛛 🚺 🕤 🕤
TUE 2	EN	EN	GG	2A		7AB	
TUE 3	н	RE			6AA	6AI	Select pos 🔻 🔄 🖪 F2 S
TUE 5	MA PE	MA PE -	PE	4E 4G	30	5AD	
VED 1	MA	MA	IT	3A	00	7AB	
VED 2	н		FB			6AD	
VED 3	AR	HI	TE	7AH		4AB	
VED 4	MU	FR	EN	2A			
THU 1	GG	HI	FN	4F	744	4F	(H→K) [1/1]: 5AC Ph
THU 2	PE	PE	PE	5G		5F	$\oplus \mathbb{R}$ [1/1]: 5E Op5
THU 3	RE	RE	MA	5F	6AA	6AI	
THU 4	FR	IT	RE		_		_
	AH CC2	MU CC2	Hi	7AH	25	25	
FBI 2	BE	BE	MU	JA 1A	4AB	7AB	
FBI 3	FR	GG	AB	4G			
FBI 4	TE	TE	MA		7AA	4AB	
FRI 5	EN	EN	FR	6AH	444	6AD	
mon 1 mon 2	AH	AH FB	FR	5E 4F	6AA	6AI	
mon 3	EN	EN	TE	7AH		7AD	
mon 4	SC3	SC3	SC3	3E	3E	3E	
mon 5	GG	RE	AR	6AH	444	4AB	
tue 1	MA	BE	TE M4	5E	7AA	5AD	
tue 3	RE	AB	EN	4F	3A	4E	
tue 4	SC2	SC2	SC2	3E	3E	3E	
tue 5	HI	FR	Hi		444	4AB	
wed 1	IT EN	FR	EN	7AH		7AD	-
wed 2 wed 3	FR	HI	RE	3A			
wed 4	MU	GG	IT				
wed 5	TE	TE	GG	4E		5G	
thu 1	RE	GG	GG	4E	3A	E / D	
thu 3	FB	HI	MA	6AL	4AB	SAU	
thu 4	PE	PE	PE	4G			
thu 5		MU	FR	5G		6AD	
fri 1	MA	MA	MA			7AD	
fri 2 fri 3	EN	EN	EN	6.01	4AA	540	
fri 4	SC1	SC1	SC1	3E	3E	3E	
fri 5	н	RE	RE	4E			
OK							
UK				_	_	_	#

If we investigate this figure we find one reasonable possibility: wed 4. Here all actual teachers are available while actual classes have pure class act. which then is transferred to the kickout list. We then use the same technique for 3A TE and get this selection:

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TP 1- Tpla	n - St (Cuthb	ert's [C	C2] [F	legister	ed version]		-		- 🗆 🗙
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School T	eacher	rs Te	eacher po	ools C	lasses	Rooms Subjects Blo	cks Pe	eriods Steering	Compressed	Selection
Selection	3A	3B	PMC	BH	TE1) isplav ki	cked out activitie	s	K K K
MON1	FR	GG	5E 5 A F	5E	4E		isnlau nr	nt laid activities		???
MON 2 MON 3	PE	PE	4AA	4AA	20		lisplau er	ased activities		XXX
MON 4	EN	EN		4G			lieplau na	arked activities		
MON 5	MA	MA	7AC		3E		rispidy pe Lisplau se	necial activities		
TUE 1	BI	IT	7AC	5AA	00		lobidy of			
TUE 2	IGG	BE	4AA 4F	988 20	2G 2C	Sei	ect p	•• • 🔲 🖪	D D	
TUE 4	FR	Ar	1-	4G	2A					
TUE 5	HI	Н	5AA	1A	1A		K) [171]: 16 IT		
WED1	PH	HI		5AA	2G	÷	B) [171]: 3F GG		
VED 2	FL	FL	500	10	10		K) [171]: 3E MU		
WED 3	BI	GG	4E	2E	2E		K> [1/1]: 3A TE		
WED 5	GG	MU	5E			÷	R) [171]: 36 IT		
THU1	RE	FB	5E	6AC	1G	÷	B [171]: 4AD CH	1	
THU 2	HI	PH		1A	1A	÷	B [171]: 4AA Bi		
THU 3	MA	MA	4E	3C	30	÷	B [171]: 5AC PH		
	AB GG	MU	4AA 544	4AA	4E	÷	B) [171]: 5F Op5		
FBI1	н	RE	5E	5E	1G					
FRI2	RE			5AA						
FRI 3	IT	FR		6AC	1E					
FRI 4	EN	EN	5AA	_	3E					
PRIS	PE	PE GG	0E 4 0 0	40.0						
mon 2	MA	MA	100	4G	2A					
mon 3	MU	IT	7AC	5AA	3G					
mon 4	EN	EN			4E					
mon 5	HI	AR	5E	6AC	1G					
tue 2	MA	MA.	488 58E	4AA	3G					
tue 3	СН	FB	UNL	4G						
tue 4	FL	FL	4E	2C	2C					
tue 5	EN	EN	5E	5E	1E					
wed 1	FR	HI	7AC	5AA	4E					
wed 2 wed 3	PH	BE	4E 5AA	3C	3C					
wed 4	FL	FL	5E	5E	1E					
wed 5	PE	PE		4G	3E					
thu 1	СН	BI		2E	2E					
thu 2	GG	GG	5AE	10	10					
thu 4	FR	FR FL	9E 5E	9E	4E					
thu 5	AB	PH	7AC	6AC						
fri 1		СН		4G						
fri 2	TE	TE	3A	3A	3A					
fri 3	EN	EN	15	20	2A					
fri 5	MA	HI MA	4E	20	20					
	1	1-11-1								
SELECT 3	BA RH	TE5	TE	CAT: 3						

Due to the actual teachers being involved in a lot of blocks, it is not easy to see a reasonable period for 3A TE. FRI 2 appear to be the simplest one: We transfer 3A RE to kickout list and then double assign teacher RH (to be adjusted later). Our current kickout list is now:

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I am happier with this list than the previous one since we only have pure class activities remaining.

It is to longwinded to show all steps in this adjustment, but I will show a few typical techniques.

I start with subject 5AC Ph.

I make a selection of this activity. (Category = Pure class for remaining examples in this chapter)

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School Teachers Teacher pools Classes Rooms Subjects Bl
Selection Image: Display kicked out activities Image: Constraint of the sector of
SELECT 3A RH TES TE CAT: 3

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TP 1- Tplan	- St Cuthbert's [CC2] [Regi	stered v	/ersion]					
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		V	M		- - 					
Cabaal Tax					ubiaata					
	icheis Teachei pour					Blocks rends steering compressed selection ruli re				
MON 1	SAC CH JLA LA2	5AB	5AC	5AA	LE	🔺 🗹 Display kicked out activities 🛛 🗳 🖾 🖾				
MON 2	5AC BHR LA5			5AC	5AE	🛄 📃 Display not laid activities 🛛 📪 📪 📿				
MON 3	5AC PH ACO LA5	5AC	5AF	6AD	5AA	📃 Display erased activities 🛛 🗙 🗙				
MON 4	5AA MA TR	6AA	7AH		4G	Display parked activities				
	SAA EN BA	788	74H	7AU	_	Display special activities				
	SAA OPZ JE TES	6AA	6AH	6AD	5F					
TUE 3	5AC BLIR LA4	5AB	5AA	5AC	4AA	Select pos 🔻 📑 🖪 F2 S				
TUE 4	5AC CH JLA LA4	5AA	5AC	6AB	4G					
TUE 5	5AA OP1 JHA	6AA	1G							
VED 1	5AA OP2 JL TE3	6AA	2E	4AE	444	E E E E E E E E E E E E E E E E E E E				
VED 2	5AA MA IR 5AA OPLINA	400	6AH	700		E [1/1]: 3E SC3				
VED 4	5AA EN BA	108	2G	3A	6AA	🕀 🚯 🚺 🚺 🗄 🚯				
VED 5	5AA RE DG	4AB			4AD	🕀 🗷 🚺 🗄 🗄 🖪				
THU 1			5AA	6AD	5AB	⊕ 🚯 ● [1/1]: 5AC Ph				
THU 2	5AA RE DG	7AA	7AH	1E	4E					
THU 3	5AC PH ACO LA8	5AC	5AF	1C	5G					
	5AA MA IH	AAD	30	1⊢ 74⊡	440					
	SAA OFTJHA	TAD		740	TAL					
FBI 2	5AA OP2 JL TE3	4AA	4AE	6AB						
FRI 3	5AA MA TR	7AA	7AH	6AD						
FBI 4	5AA OP1 JHA	6AA	2B	2E	4AC					
FRI 5	5AA OP3 JC LA4	4AB		4AE						
mon 1	5AC PH ACO LA8	5AC	5AF	5AA	5AD					
mon 2	5AA EN BA	4AA 7AA	7AH	4AE	4G					
mon 4	SAC PE VH SH2	544		1E						
mon 5	5AA MA TR	6AA	4AE							
tue 1	5AC PH ACO LA5	5AC	5AA	2F	5AF					
tue 2	5AC CH JLA LA5	5AB	5AC	5AA	5AE					
tue 3	5AA EN BA		1D	7AD	4G					
tue 4	5AA UP3 JC LA4 5AC PE VH SHI	500	7AH	11-	AAC					
wed 1		744	2F	4.0F	448					
wed 2	5AA RE DG	6AA	2A	2E	5E					
wed 3	5AA OP1 JHA		2B	6AB	4AA					
wed 4	5AA MA TR	7AA	3C		6AA					
wed 5	5AA OP3 JC LA4		1G		4G					
thu 1	5AA OP3 JC LA4	7AA	2G	6AB	4F					
thu 3	SAC BEIN LAS	400	SAL	5AC	JAE 4AC					
thu 4	5AA MA TR	6AA	6AH	6AD	THU					
thu 5	5AA EN BA		2A							
fri 1	5AA EN BA	7AA	1D	6AB	4G					
fri 2	5AA RE DG	4AB		2F						
fri 3	5AC BLIR LA4	5AB	5AA	5AC	4AE					
fri 5	5AC CH JLA LA5	5AA	5AC	10	4G	-				
SELECT 5/	CLECA Ph C	ΔΤ· 4								
SELECT SP	ICLE CA PIL C	A1.4								

The interesting period is THU 1 where 5AC is available while LE is booked. ACO could possibly teach here. As luck would have it we immediately spot a solution: ACO in MON 1 may be interchanged with LE in THU1 (both are teaching pure class in 5AB in those periods). We does that interchange and 5AC Ph may be assigned in THU 1. I could show that this adjustment gives a room conflict. In any case it is more seldom you see directly a possibility and later examples will show a more general way of doing such adjustments. Next I try to adjust 3G IT and get this selection:

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TP 1- Tpla	an - St C	Cuthbe	ert's [CC	2] [Re	egistere	d versi	on]						
<u>F</u> iles <u>E</u> d	dit For	m <u>a</u> ts	F <u>u</u> ncti	ions	C <u>o</u> ntro	<u>R</u> un	<u>M</u> a	inten	ance	Comp	ressed	<u>H</u> elp	p
	🗋 🕒		QB) [7 [t)		n			1			
School	Teacher	s Tea	acher po	ols Cl	asses	Rooms	Subje	ects	Blocks	Period	ls Ste	ering	Compressed Selection Full Text Tables Listings Various
Selection	3G	КР	CDA	LMC	MD	IL	AO	DK	TE1	JS	RF	SS	Display kicked out activities
MON1 MON2	EN	3G 2C	4AA	1C 4 0 0	1D 4.0.0	7AB	1G	2D	4E		26	26	Display not laid activities
MON 3	GG	4E	2A	3G	6AB			1D	26		004	4AA	Display erased activities
MON 4	SC1		1C	3D	2B	6AB	1E	4G		_			Display parked activities
	MU DE	6AU 2C	40.0	1Gi 200	7AB 54.4	760	⊪	20	3E		4AA 2G	36	Display special activities
TUE 2	GG	4E	20	3G	30	6AB	1E	1D	2G		5AA	4AA	
TUE 3			3C	2E	3E		2F	1B	2C		1D		Select pos 🔻 🔤 🖪 F2 S
	PE	6AD 4AA	1E 2.4	6AC	3G 2E	34	1G 1E	4G 2C	2A 1A	3B 6AD	4AA 2E	3C 2D	
VED1	IT	4E	3C	1C	5AA	211	3G	1B	2G	6AD	1D		⊕ - R 11/11:3F 66
VED 2	FR	4AA		2B	3E	6AB		3G	1C				
VED 3	TE	4E	40.0	5E	3C 2B	7AB 3H	2G 1E	1F 2D	3G 2E	3E	2F	3E	
WED 5	PE	30	1000	5E	20	011		1G	26	2D	5AA	3B	
THU1	EN	3G	4AA	3D	6AB		1D	1F	1G		2F		😟 🚯 🚺 🚺 🗄 🚯 🖬
THU2	PE		1C	_		3A	1G	2C	1A	6AD	5AA	2B	i∰ - 🚯 🚺 [1/1]: 5F Op5
THU 3	BE		36	4AA	488		ZE 1A	3E	30 4E	1A 4E	ID 3G	4A.A	⊞ · B [1/1]: 3A BE
THU 5	Hi	4E	2C	5E	2E	3G		2F		3E		3B	⊞… <u>K)</u> [1/1]: 5AA Ch
FBI1	SC2	6AD	4AA	2E	7AB	3A		1D	1G				
FRI2 FRI3		4E 4 0 0	30	6AC 1G	2B	64B	2F 2G	1F 3F	3A 1E	36		3G	
FBI4	MA	4E	3G	5E	10			2F	3E	6AD		1A	
FRI 5	FR		2C	5E	6AB	5AA	1E	3G		5AA		5AA	
mon1	FR	4E 2G	3C	10	_	20	1A	3G AG	26	3E	2F	4AA	
mon 3	TE	504	4AA	3D	5AA	7AB	1E	2C	3G			3A	
mon 4	SC3		2A		3C			1F	4E	6AD			
mon 5	AR	3C	10	000	05	3A	10	00	1G	3G		1A	
tue 2	MA	4E 3C	3G	4AA	4AA	6AB	2G	20	1C	6AD		2D	
tue 3	EN	3G	4AA	5E	7AB		1E	4G					
tue 4	SC2	4AA	2A	2E	25	5AA	1C 1G	1D 25	2C	5AA		5AA	
wed 1	EN	3G	20 2A	1C	5AA	7AB	a	2F 2D	4E	4E	2F	-	-
wed 2	MA		3G	4AA	4AA		1E	2F	3C	6AD	5AA		
wed 3	RE	4E	10	5E	3C		2G	3E	1A 10	2D	3G	2F	
wed 4 wed 5	GG	4/4/4	2C	3G	28 1D	5AA	1F	4G	3E	5AA	4AA	5AA	
thu 1	GG	6AD	2A	3G		5AA	1G	2D	2E	5AA		5AA	
thu 2	RE	4E	3C	4AA	4AA		00	1B	1C	6AD	3G		_
thu 3 thu 4	PE	3C 4AA	3G 1C	5E	6AB		2G	3E 1G	4E	4E 1A		2B	
thu 5	FR		2C	3D	7AB	зн	1C	3G			4AA		
fri 1	MA	6AD	3G	1G	2E	7AB	1E	4G			4AA	2F	
fri 2 fri 3	EN	3G	1E 30	6AC 2E	36		26	1D 2E	3A 24	20	5AA 1D	3C	
fri 4	SC1	3C		2B	1D	5AA	1E	1G	2C	6AD	.0	5AA	
fri 5	RE	4AA			3E		2E	2D	2G		3G		
SELECT 3G AO IT3 IT CAT: 4													

The problematic period is TUE 3 where 3G is available while AO is booked. I make the same selection as above but include TUE 3 as Actual position. The result is:

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The International Internation Internation International In													
<u>F</u> iles <u>E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Com <u>p</u> ressed <u>H</u> elp													
	F) 🖻		QA		h		റിര	E FE	F	T)			
	Taraha												Compressed Selection Full Task Takkes Listing Vision
School	l eache	rs Lea	acher po		asses I	Hooms	Subje	ects	BIOCKS	Perio	ds Ste	ering	Compressed Selection Full Text Tables Listings Various
Selection MON 1	3G EM	3G	4AA		ID 10	7AB	AO IG	20	4F	JS	RF	SS	Display kicked out activities
MON 2	RE	3C	1E	4AA	4AA			1B	2E		3G	3A	Display not laid activities
MON 3	GG	4E	2A	3G	6AB	CAD	10	10				4AA	Display erased activities
MON 5	MU	6AD		1G	7AB	6AB	1F	40 2C	3E		4AA	3G	Display parked activities
TUE 1	RE	3C	4AA	2B	5AA	7AB		1F			3G		Display special activities SSS
TUE 2	GG	4E	2C	3G	3C	6AB	1E	1D	2G		5AA	4AA	
TUE 4	HI	6AD	3C	6AC	3E 3G		2F	4G	20 2A	3B	4AA	3C	Select pos V
TUE 5	PE	4AA	2A		2E	3A	1E	2C	1A	6AD	2F	2D	🕀 🚯 🛛 🛛 🕂 🗛 🗛 🖓 🕀 🚱
VED1	IT	4E	3C	1C	5AA	010	3G	1B	2G	6AD	1D		📴 🗷 🚺 🚺 🗄 🖪 🖉
VED 2	FR TE	4AA 4E		2B 5E	3E 3C	7AB	2G	3G 1F	1C 3G	3E	2F	_	E E [1/1]: 3E MU
VED 4	EN	3G	4AA		2B	ЗН	1E	2D	2E			3E	
VED 5	PE			5E				1G		2D	5AA	3B	
THU1	EN PE	3G	4AA 10	3D	6AB	36	1D 1G	1F 2C	1G 14	SAD	2F	2B	
THU3	MA		3G	4AA	4AA		2E	1G	30	1A	10	20	
THU 4	RE						1A	3E	4E	4E	3G	4AA	
THU 5	Hi	4E	2C	5E	2E	3G		2F	10	3E		3B	
FBI1 FBI2	SU2 MU	4E	4AA 3C	2E 6AC	7AB 5AA	3A	2F	1E	3A			3G	
FRI3	AB	4AA	1C	1G	2B	6AB	2G	3E	1E	3G			
FRI 4	MA	4E	3G	5E	1D		15	2F	3E	6AD		1A	
FRI5	FR	45	20	5E	6AB	5AA	1E 1A	36		5AA 25	25	5AA 444	
mon 2	EN	3G	30	1C		3H	165	4G	2A	JE	1D	100	
mon 3	TE		4AA	3D	5AA	7AB	1E	2C	3G			3A	
mon 4	SC3	20	2A		3C	24		1F	4E	6AD		10	
tue 1	TE	4E	1E	2B	2E	6AB	1D	2C	3G	1A		4AA	
tue 2	MA	3C	3G	4AA	4AA		2G		1C	6AD		2D	
tue 3	EN	3G	4AA	5E	7AB		1E	4G					
tue 4	Hi	4AA 4E	2A 2C	6AC	3E	3G	1G	2F	2C 1E	SAA		5AA	
wed 1	EN	3G	2A	1C	5AA	7AB		2D	4E	4E	2F		
wed 2	MA		3G	4AA	4AA		1E	2F	3C	6AD	5AA		
wed 3	RE SC2	4E	10	5E	3C 2B		2G	3E 1B	1A 1E	20	3G	2F	
wed 4	GG	444	2C	3G	1D	5AA	1F	4G	3E	5AA	4AA	5AA	
thu 1	GG	6AD	2A	3G		5AA	1G	2D	2E	5AA		5AA	
thu 2	RE	4E	3C	4AA	4AA			1B	1C	6AD	3G		
thu 3 thu 4	MA PE	3C 4AA	3G 1C	5E	6AB		2G	3E	4E	4E		2B	
thu 5	FR		2C	3D	7AB	ЗH	1C	3G			4AA		
fri 1	MA	6AD	3G	1G	2E	7AB	1E	4G			4AA	2F	
fri 2	EN	3G	1E	6AC	20		20	1D	3A 20	20	5AA	3C	
fri 4	SC1	3C	36	2E 2B	1D	5AA	1E	1G	2A 2C	6AD		5AA	
fri 5	RE	4AA			3E		2E	2D	2G		3G		
SELECT 3G AO IT3 IT CAT: 4 TUE 3													

The green periods here are those which may be interchanged with TUE 3. In addition we want to find a green period where AO is available meaning that 3G IT may be assigned there. That is fulfilled for THU 5 (amongst several others) and we select that interchange and 3G IT is then assigned in THU 5.

Next we select 1G IT and get this selection:
Harald Michalsen

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TP 1- Tpla	n - St	Cuth	bert's [CC2]	[Regist	ered v	ersion]						-										
<u>F</u> iles <u>E</u> di	it Fo	rm <u>a</u> ts	s F <u>u</u> n	ctions	C <u>o</u> nt	rol <u>F</u>	<u>R</u> un <u>M</u>	<u>l</u> ainte	nance	Co	mpress	ed <u>H</u> e	elp										
	1 🖻	╞		e) V	P	1		> E	ŧ₩							1		F	1				⋮■∎∎+■+
School T	eache	rs Te	eacher	pools	Classes	Roo	ms Sul	ojects	Bloc	ks Pe	eriods	Steering	Comp	ressed	Sele	ction	Ful	Text	Tabl	es Listi	ngs V	arious	
Selection	1G	HL	JDO	JG	JLA	SL	LMC	AO	DK	TE1	LC	PMG	MB	DP		V C	Displa	w kick	ed out	activitie	s		K) K) K)
MON1 MON2	HI Ma	10	3E BAC	5AF 1G		5AE 6AL	10	16	2D 1B	4E 2E	6AH 6AH	30	AF				Displa	- iv not l	laid ac	tivities			???
MON 3	BI	2E	4E	4E	5AF	1G	3G		1D		7AI		3E				Displa	v eras	ed act	ivities			XXX
MON 4	En	1E	1G		7AH	4E	3D	1E	4G		4F						Displa	v nark	ed acl	tivities			
MON 5	GG	2A	2A	5E	7AH	3C	1G	1F	2C	3E	1E	2G	4AA				Displa	v sper	cial act	tivities			
TUE 1	PE Ma	2C 14	3E	16	FAH FAH	5Gi 5E	2B 3G	1E	1F 1D	26	5AA 1C	10	4E 5.0.0	1E 310				y - F					
TUE 3	RE	1C	01	5AF	5AA	5AE	2E	2F	1B	2C	6AH		1G	1F		Se:	lect	pos	-		F2	S	
TUE 4	IT	2E			5AC	4F	6AC	1G	4G	2A	7AI		4AA				_						
TUE 5	СН	1E	4AA	100	1G	3C	10	1E	2C	1A	4F	-	10			+ :	R) •	11	/1]: 1	IG IT			
WED 2	RÉ	16	4E	4E	2E 6AH	2C 1B	1C 2B	3G	18	2G	5AA 1E	7AI 24	1G AF			+	R)	[1	11:4	4AD CH			
WED 3	PE		1000	1D	4AE		5E	2G	1F	3G		6AI	2A	2E		+	R)	[1	/1]: /	4AA Bi			
WED 4	PH	1E		1G	2G			1E	2D	2E	2C		6AA			±	R)	11		5F Up5			
WED 5	FR	2A	2A	1F			5E		1G		10		5AA	1D		±	K)	[1	/1]: !	DAA Ch			
THU1	TE	1A	_	5AF	5AC	4G	3D	1D 1G	1F	1G	7AI		10	2C									
THU 3	FB	2C		5E	5AF	5AE	4AA	2E	1G	3C	6AH		3E	1F									
THU 4	в	2E		2G	3C	1G		1A	3E	4E	3A		2A	1C									
THU 5	Ar	2A	2A		4AE		5E	3G	2F		1G			3F									
FBI1	TE	2A	2A	15	7AH	1E	2E	05	1D	1G	2C	6AI	1C	10									
FBI2 FBI3	GG	14	4E 4.0.0	4E 3C	4AE 74H	OE 4F	1G	2F 2G	IF 3E	3A 1E	0AA 4F	781	3E	в									
FBI4	RE	2C			2B	2G	5E		2F	3E	7AI		1G	2A									
FRI 5	PH		3E	1G			5E	1E	3G		5AA	1D	4E	1C									
mon 1	AB	1C	4E	4E	5AF	5F	10	1A	3G	0.1	6AH	1G	-										
mon 2 mon 3	Pe Pe	1A 1E	3E	IG	7AH	6AI	30	1E	4G	36	54H	24	4E										
mon 4	En	2C	1G			2G			1F	4E	2E	1D											
mon 5	TE			1F	4AE	2C				1G	7AI	3B											
tue 1	EN	1G	4E	4E	5AA		2B	1D	2C	3G	7AI	2G	1C	3D									
tue 2 tue 3	AB	2E	6AC -	16	5AC	6AL	4AA 5E	2G	4G -	nc -	6AH	7AI 1G	2A 3E										
tue 4	RE		4AA		7AH	1E	2E	1C	1D	2C	5AA	6AI	1G	2G									
tue 5	н	2A	2A			1B	6AC	1G	2F	1E													
wed 1	MU				2E	1A	1C		2D	4E	5AA			1G									
wed 2 wed 3	MA EN	1E	3E 7 6 6	1G	2A 2B	5G 2C	4AA 5E	1E 2G	2F 3F	3C	2C 1C		5AA 24	1D 2E									
wed 4	GG	2C	4AA	2G	3C	20	1G	20	1B	1E	2E		6AA	20									
wed 5	СН	1A		5E	1G	4F	3G	1F	4G	3E	5AA	2G	4AA										
thu 1	н			3C	2G	4G	3G	1G	2D	2E	5AA		3E										
thu 2	RE	2E	4E	4E	5AF	1A	4AA	20	1B 25	1C	7AL		1G	2A 1G									
thu 4	FB	2A 2C	466		6AH	4E	5E	20	1G	46	4F			1E									
thu 5	En	1A	1G	1D	2A	5E	3D	1C	3G		3A		4AA	3F									
fri 1	GG	1E			1D	4E	1G	1E	4G		4F		4AA										
fri 2	MA	1C	3E	1G	500	2C	6AC	20	1D	3A	2E	6AI	5AA	1B									
fri 4	FB	2E -	5AC 7AA		5AA	OE	2E 2B	2G	2F IG	2A 2C	5AA	2A	3E 1C	2C 2G									
fri 5	EN	1G	4AA	5AF	5AC	4F		2E	2D	2G	7AI	3C	2A		Ŧ								
SELECT	1G A(D IT7	П	CAT:	4																		

This is a more complicated case. The critical period is FRI 2 but we notice that all teachers for 1G in pure class act. are booked in this period meaning an interchange won't help us. The next possibility is to try to free AO in FRI 2. We select teacher AO in FRI 2 and get this selection:

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TP 1- Tpla	an - St	Cuthb	ert's [C	C2] [R	egiste	red ve	rsion]					e	
<u>F</u> iles <u>E</u> c	<u>Files E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance Compressed <u>H</u> elp												
	D) 🙆		QE	₽ (∧ (þ	1			₽₩				
	Turk							- C			 :		Compressed Selection Full Task Tables Listing (
School	l eache	ars ie	acher pi		lasses	Room	າຮຸວເ	aplects	BIOC	ks Fe	noas 5	steenin	
Selection MON 1	2F	MDI	CV	IR 54.4	SB 1F	25	AO IG	20	MS 4F	RF	SS		🔽 Display kicked out activities 🛛 🚯 🚯 😢
MON 2	TE	5AF	5AD	5AC	1D	2C		1B	4AA	3G	3A		Display not laid activities
MON 3	EN	5AE	5AB	6AD	2D	4AA	15	1D			4AA		🔲 Display erased activities 🛛 🗙 📉
MON 4 MON 5	PE AB	2C 3C	1A 2D	ZAD			1E 1F	4G 2C	2E	44.4	36		Display parked activities
TUE 1	СН	2E	2F	3A				1F	3F	3G			Display special activities
TUE 2	GG	2B	3B	6AD	2F	4AA	1E	1D	7AI	5AA	4AA		
	IT EN	4AE 5AE	4AD	5AC	10	1A 200	2F	1B 4G	7AD	1D	30		Select pos 🔻 🔤 🖪 F2 5
TUE 5	RE	3C	6AG	on c	1D	3B	1E	2C	5AA	2F	2D		
VED1	AB	4AD	6AG	4AE	1F	3B	3G	1B	2F	1D			
VED 2	CH	1F	2F	240		1A	00	3G	7AD	05		-	🕀 🚯 🛛 [1/1]: 4AA Bi
WED 3	RE Te	4AC 10	4AU	3A	14	3F 3D	1E	<u>1</u> ⊩ 2⊡	5AA 7AI	21-	3E		⊕- <mark>® [1/1]: 5F Op5</mark>
VED 5	MA	4AE	4AC			2C		1G	5E	5AA	3B		🗄 🚯 🚺 [1/1]: 5AA Ch
THU1	RE		5AE	6AD	1E	3F	1D	1F	5E	2F			
THU2	MA	3B	2D	1E			1G	20	7AD	5AA	2B		
THU3	Ma EM	30	5AU	1C 1F		4AA	2E 1A	3E	4AA	10 3G	4AA		
THU 5	FR	4AD	1B	7AD		3D	3G	2F	5AA		3B		
FBI1	AB		2D	7AD				1D	2F				
FRI2	IT	4AC	1E	6AB			2F	1F	6AI		3G		
FRI3 FBI4	FB	3C 1B	SC 6AG	6AD 2F			26	3E 2F	7AU 544	_	14		
FRI5	GG	4AD	4AC	4AE	2F		1E	3G	5E		5AA		
mon 1	RE	5AE	2D	5AA	1E	4AA	1A	3G	3F	2F	4AA		
<u>mon 2</u>	PE	4AC	_	4AE		2C	45	4G	7AD	1D			
mon 3 mon 4	GG		5AB	1E	2F	25	IE	1E	4E		3A		
mon 5	Pe	4AD			-				5E		1A		
tue 1	BI	5AE	5AB	2F	2D	4AA	1D	2C			4AA		
tue 2	EN	5AF	5AD	5AA		2C	2G	40.	4AA		2D		
tue 4	PH	2E	18 18	1F		21	1C	4G	7AD		5AA		
tue 5	FR	1C			1D		1G	2F	6AI				
wed 1	RE	4AC	4AD	4AE		3B		2D		2F			
wed 2	FR	1C	6AG	2E	20	3E	1E 2G	2F	4AA 54.4	5AA 3G	2E		
wed 5	GG	3C	440	OAD	2F	1A	20	1B	7AD	50	21		
wed 5	MA	2B				3D	1F	4G		4AA	5AA		
thu1	TE	3C	3C	6AB	1A		1G	2D	6AI		5AA		
thu 2 thu 3	EN MA	2C	1E 5AB	5AC		3E	26	1B 3F	4AA 7AD	3G		+	
thu 4	PH	2F	ond.	6AD		01	20	1G	5E		2B		
thu 5	HI	3B			1E	2F	1C	3G		4AA	3E		
fri 1	MU	1B	3B	6AB	0.00		1E	4G	6AI	4AA	2F		
fri 3	FB	4AE	4AC	2F 5AC	20	IA	2G	10 2E	7AD	5AA 1D	30		
fri 4	EN	01-11	6AG	or to	1F	3B	1E	1G	5AA		5AA		
fri 5	Ma	5AE	5AD	1C	1A		2E	2D	5E	3G			
SELECT	2F AG	D IT7	п	CAT: 4	FRI 2								

Green periods are the most interesting (while yellow ones could also be used breaking a day conflict). As luck would have it wed 1 is green and teacher AO is also available here and we of course do that interchange and then assign 1G IT in FRI 2

I will not show further adjustments, but I completed this timetable with these error messages (LIANW):

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TP 1- Tplan - 5	St Cuthbert's	[CC2] [Register	ed versio	n]					x
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts F <u>u</u>	nctions	C <u>o</u> ntro	l <u>R</u> un	<u>M</u> ainte	nance <u>H</u>	<u>H</u> elp			
	۵. 🖓 🗠	B 👗	B) 🖸 🖻	ÐÐ			×	
School Teac	hers Teache	r pools 🛛 (Classes	Rooms	Subjects	Blocks	Periods	Steering	Compre	• •
		- LI	ANW -	Manual	errors	and/or	compr	omises		-6
TEACHERS H	AVING SEVE	RAL ACT	IVITIE ACTI	S IN SA	ME POS	ITION				
KS WEI	DNDAY	4	7AA	MA	7AH Ma	2				
TR TH	JRSDA	4	5AA	MA	7AG FM					
CW fr:	iday	3	4AD	CH	5AE CH	-				
JB th	irsda	2	SAD	BI Di	SF OP	5				
DH FD		2	4AA 37	DL TF	4AL D1	2				
	IDAI	2	JA	112	JAA UP	2				
WARNING (OR	ERROR) FO	R ACTIV	/ITY:					6AH PY		
A	CTIVITY HA	S PER-I	LENGTH	2	ON:	MONDAY				
A	CTIVITY HA	S PER-I	LENGTH	2	ON:	monday	·			
WARNING (OR	EDDODA FO							777 M7		=
WARNING (OR	TTVTTV HA	S SEVER	/111; 21. PF	B ON.	WEDND	AV 4		/AA MA		
*** ROOM LA	ACKS IN TH	ESE CAS	5ES ***			CITION				
ACTIVITY S	BI BI	ACREK I	CA	. DAY	. PO	2 NOLLIC				
AF CH	CH	ST.	LA2	III fri		3				
5AA 0P2	OP2	LC	TF2	LDI		2				
5AD CH	CH	тн	ANYS	THE	T	1				
5AE CH	CH	CW	ANYS	THU	T	1				
5AD BI	BI	JB	ANYS	thu	L	2				
										Ψ.
										đ

There is still a way to go with some teacher changes and to find lacking rooms. I am far from ashamed of this result for a fairly large and complex UK school.

I did not do the adjustments in the exact order as explained above and I also skipped some more trivial adjustments. My hope is to give the reader some understanding of how to use Tplan to solve any timetable problem. To sum it up I think that my two last adjustments of 3G IT and 1G IT are the ones teaching you most:

For 3G IT I tried to interchange an available period for a class with some other period hoping to find a period where actual teacher was available.

For 1G IT we also worked with an available period for a class, but here we tried to interchange actual teacher in such a way that he also was available in same period as actual class.

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In both cases the colour codes in Tplan told you easily about possible solutions and a few drag/drops adjusted the table. I know that both techniques are the fundamental principles for adjusting ANY timetable. You could of course find a compromise by some other method. However, think how fast proper selections, colour codes and a few drag/drops lead to a sensible solution!

6.4.2 Cross Linking of Components

I have certain reservations with showing this possibility, but I know that such arrangements occur to some extent in real life. My reservations is due to I perfectly well that this might lead to very complex (hopeless?) timetabling if the total timetable data is not good organised. Well here we go. The subject register might look like this:

📭 1- Tplan - St Thomas More Catholic School [405] [Registered version]											
<u>Files E</u> dit Form <u>a</u> ts F <u>u</u> nctions C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance <u>H</u> elp											
) 🕒 🗖			a a a		€Σ		X			RSPC
School T	eachers 1	Feacher po	ols Classes f	Rooms Subj	ects Block	s Periods 9	Steering	Compress	ed Table	Full text - Table	Tables List
	Class	lact-	Subject-	Periode	Period	Teacher	Room	C1aee	Ic1	Full name	Component A
	CLA +	Name	Name		B'down	+	+	CLB +	CLC +	- dill india	Text?
00379	6G	MT	MT	8	2222						¥62
00380			MT				IT				¥72
00381	6A	BS	BS	4	22	ARO					¥63
00382	6A	BS.	BS.	4	22	BFE					¥63
00383	6B	PE	PE	4	22	BCO					¥63
00384	6B	PE.	PE.	2	2	NSM					¥63
00385	6B	PE	PE	2	2	CMF					¥63
00386	6C	н	Н	4	22	MLA					¥63
00387	6C	н.	Н.	4	22	CCR					¥63
00388	6D	P	P	4	22						¥63
00389	6D	₽.	Ρ.	4	22						¥63
00390	6E	A	A	4	22	ATH					¥63
00391	6E	Α.	Α.	4	22	JMO					¥63
00392	6F	ELA	ELA	4	22						¥63
00393	6F	ELA.	ELA.	4	22						¥63
00394	6A	ELA	ELA	4	22					6A ELA	Y64
00395	6A	ELA.	ELA.	4	22						Y64
00396	6B	с	с	4	22						Y64
00397	6B	c.	c.	4	22						Y64
00398	6C	G	G	4	22	CST					Y64
00399	6C	G.	G.	4	22	FSM					Y64
00400	6D	GM	GM	4	22	HDU					Y64
00401	6D	GM.	GM.	4	22	JMT					Y64
00402	6E	B1	B1	4	22						Y64
00403	6E	B1.	B1.	4	22						Y64
00404	6F	В	В	4	22						Y64
00405	6F	в.	В.	4	22						Y64
00406	6G	TS	TS	8	2222	LSW					Y64
00407	бН	DT	DT	4	22						Y64
00408	6H	DT.	DT.	4	22						Y64
00409	61	MU	MU	8	2222						Y64
00410			MU				IT				¥74 👻
•											P

The interesting rows here are the two first and the two last. The subject 6G MT is included in component Y62 and Y72 i.e. form 6 and form 7 is CROSSLINKED. The subject 6I MU is included in included in both Y64 and Y74 i.e. another CROSSLINK. We have a situation where form 6 and 7 is cross linked in both 2^{nd} and 4^{th} component.

The school in question is perfectly organised regarding work load for teachers; in fact it is a no kickout school. We end up with a timetable like this:

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TP 1- Tpla	an - St Thom	nas More Ca	tholic Schoo	ol [405] [Re	egistered ve	rsion] 😐					
<u>Files</u> Ed	<u>Files Edit Formats Functions Control Run Maintenance Compressed H</u> elp										
	D 🕒 🔒	QA	Y P (†	- n	₩₩	1 2 2					
School	Teachers T	eacher pools	Classes F	Rooms Sub	jects Blocks	Periods S	Steering 🚺 📩				
Table	6E	6F	6G	6H	61	7A	7B				
MON 1	6E B1	6F B	6G TS	6H DT	6I MU	7A GM.	7B ELA				
MON 2	6E B1	6F B	6G TS	6H DT	6I MU	7A GM.	7B ELA				
MON 3	6E A.	6F ELA				7A M	7B B				
MON 4	6E A.	6F ELA				7A M	7B B				
MON 5	6E B.					7A FM	7B PS				
MON 6	6E B.					7A FM	7B PS				
MON 7	6E TX.	6F PS.	6G MT			7A RE.	7B C.				
MON 8	6E TX.	6F PS.	6G MT			7A RE.	7B C.				
TUE 1	6A FMXX	6A FMXX	6A FMXX	6A FMXX	6A FMXX	7A A	7B BS				
TUE 2	6A FMXX	6A FMXX	6A FMXX	6A FMXX	6A FMXX	7A A	7B BS				
TUE 3	6E B1.	6F B.	6G TS	6H DT.	6I MU	7A GM	7B ELA.				
TUE 4	6E B1.	6F B.	6G TS	6H DT.	6I MU	7A GM	7B ELA.				
TUE 5	6E TX.	6F PS.	6G MT			7A RE.	7B C.				
TUE 6	6E TX.	6F PS.	6G MT			7A RE.	7B C.				
TUE 7	6E B					7A M.	7B B.				
TUE 8	6E B					7A M.	7B B.				
WED 1	6E A	6E ELA				7A A.	7B BS				
WED 2	6E A	6E ELA				7A A.	7B BS				
WED 3	6E B					7A M.	7B B.				
WED 4	6E B					7A M.	7B B.				
WED 5	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE				
WED 6	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE				
WED 7	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE				
WED 8	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE	6A CORE				
THU 1	6E A	SE ELA				76 A	78 BS				
THU 2	GE A	SE ELA				74.4	78 BS				
THU 3	GE TX	6E PS	66 MT			74 BE	78 C				
THU 4	IGE TX	6E PS	6G MT			74 BE	7B C				
THU 5	6E B1	6F B	6G IS	6H DT	6I MU	7A GM	7B ELA				
THU 6	6E B1	6F B	6G TS	6H DT	6I MU	7A GM	7B ELA				
THU 7	6E B.					7A FM	7B PS				
THU 8	6E B.					7A FM	7B PS				
FBI 1	64 EMXX	64 EMXX	64 EMXX	66 EMXX	64 EMXX	76.6	78 BS				
FBL2	64 EMXX	64 EMXX	64 FMXX	64 FMXX	64 EMXX	74 A	78 BS				
FBL3	6E A	6E ELA	STATISTICS -	Sector Present	Sector Contractor	74 M	78 B				
FBL4	6E A	6E ELA				74 M	78 B				
FBL5	6F TX	6E PS	6G MT			7A BE	7B C				
FBL6	6F TX	6E PS	6G MT			7A BE	7B C				
FBL7	6F B1	6F B	66 TS	6H DT	6LML	7A GM	78 ELA				
FBL 8	6E B1	6F B	6G TS	6H DT	6I MU	7A GM	7B ELA				
•											

The grey cells (2nd component) are in parallel in 6th and 7th form. The pink cells (4th component) are also in parallel. Everything is nicely organised as requested. I have of course no objection to this data set, but I will stress that such organisation may be the start of a very slippery road where you could easily go astray.

6.4.3 Teacher Pools

I have never officially documented this facility which I absolutely see could be a very useful tool in various contexts. The mechanism has not been my main concern while developing drag/drop in

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version 29.1. However, I would like to sum up the current situation and while developing the P4operator I realise that we could give Teacher Pools extended use by including these in sensible selections even if the school is not using pool teachers at all in their subject register. A Teacher Pool Register might look like this:

TP 1- Tpla	an - St. I	Matthev	v's [SM9] [Reg	istered	version]
<u>F</u> iles <u>E</u> d	lit For	m <u>a</u> ts I	F <u>u</u> nctior	ns C <u>o</u>	ntrol	<u>R</u> un <u>N</u>	<u>/</u> a
	🗋 🕒) B	X 🖻	ê.		2
School	Teacher	s Teac	her pools	Class	es Roo	oms Su	Ы
+	Pool	T01	T02	T03	T04	T05	Т
00001	#Ar	CHa	AGr	NSu			
00002	#D7	VOB	ROu				
00003	#D8	VOB	ROu				
00004	#D9	VOB	ROu				
00005	#E7	LLi	DRo	KAd	HAI	CDr	Α
00006	#E8	DRo	KAd	HAI	CDr	NGr	А
00007	#Gg	SBr	NSh				
00008	#Hi	AMo	Zlq	DCo	JGe		
00009	#H7	AMo	SBr	JGe	NSh		

A Teacher Pool is defind be 3 characters and the first one MUST be: #. Then follows the initials of the teachers included in various pools. These pool identifiers MUST ALSO be entered in Teacher register and Room register. The general idea is to require a pool identifier as teacher in subject register. This is more or less treated as a room group, and when you eventually do the room allocation you select the actual teacher for the various subjects. This teacher allocation is subject to VERY STRICT RULES about using as few teachers as possible for the same subject.

There is more to Teacher Pools than that. The teacher register looks like this:

🌇 1- Tplan - St. Matthew 💻 🗖 💌												
<u>Files</u> <u>Edit</u> Form <u>a</u> ts F <u>u</u> nctions												
C <u>o</u> ntrol <u>R</u> un <u>M</u> aintenance <u>H</u> elp												
School	School Teachers Teacher pools Classe											
	Initials	Teachers	Pos									
	NN	name										
001	KHo	Hogan K.	0									
002	AAg	Ager A.	15									
003	MGr	Green M.	39									
004	004 JCa Cartwright J. 42											
005 SBu Burrow, S. 44												
006	КМс	McGrane K.	44									

The interesting column here is now Pos (i.e.). When using Teacher Pools this value states the MAXIMAL NO OF PERIODS a teacher may teach in ordinary teaching + periods being included in some pool. This limitation is quite obvious: Assume for instance that the headmaster or some parttimers with few periods are included in pools and without some limitation they are very tempting to use in Pool arrangements.

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School T	eachers Tea	acher pools 🛛 (Classes Rooi	ms Subjects	Blocks Per	riods Steerin	g Compresse	d Table Ful	Text T 🔩	
T abla	791	752	753	1754	795	7T1	1712	773	774	
MON 1	TecB AKe	TecB BW/b	TecR WPe	TecB CBa	TecB TCu	En #E7	MEL #M7	Hum SBr	Re ABo	
MON 2	TecB AKe	TecB BWh	TecB WPe	TecB CBa	TecB TCu	MEL #M7	En HAI	Hum SBr	BeABo	
MON 3	Math GSc	Math JMc	Math KMa	Math MCr	Math KCe	ScB LYa	Re ReA	En #E7	MFL #M7	
MON 4	Math GSc	Math JMc	Math KMa	Math MCr	Math KCe	ScB LYa	Re ReA	MFL #M7	En KAd	
MON 5	En #E7	MFL #M7	Re ReA	Re SBu	ReJCa	Math SMc	Math CCa	MathJMc	Math GHa	
MON 6	MFL #M7	En #E7	Re ReA	Re SBu	ReJCa	Math SMc	Math CCa	Math JMc	Math GHa	
MON 7	ScB SWH	Re MGr	En #E7	MFL #M7	ScB RCo	Hum NSh	ScB LYa	ScB GBr	ScB #Sc	
MON 8	ScB SWH	Re MGr	MFL #M7	En #E7	ScB RCo	Hum NSh	ScB LYa	ScB GBr	ScB #Sc	
MON 9	Dr ROu	HumJGe	Ar NSu	Mu DCh	En #E7	Re SBu	ScA JMo	ScA SWH	Ar #Ar	
MON 10	Dr ROu	HumJGe	Ar NSu	Mu DCh	MFL #M7	ReJCa	ScA JMo	ScA SWH	Ar #Ar	
TUE 1	MFL REI	MuDCh	En DRo	Ar NSu	Hum SBr	Re SBu	ScB LYa	Dr VOB	Hum AMo	
TUE 2	MFL REI	Mu DCh	En DRo	Ar NSu	Hum SBr	Re SBu	ScB LYa	Dr VOB	Hum AMo	
TUE 3	Re MGr	En HAI	Re ReA	En KAd	En DRo	Math SMc	Math CCa	Math JMc	Math GHa	
TUE 4	Re MGr	En HAI	Re ReA	En KAd	En DRo	Math SMc	Math CCa	MathJMc	Math GHa	
TUE 5	Math GSc	Math JMc	Math KMa	Math MCr	Math KCe	MFL KCo	Re ReA	En KAd	En LLi	
TUE 6	Math GSc	MathJMc	Math KMa	Math MCr	Math KCe	MFL KCo	Re ReA	En KAd	En LLi	
TUE 7	En AHo	MFL REI	Hum AMo	HumJGe	MFL EGe	TecA AKe	TecA RWh	TecA WPe	TecA CRa	
TUE 8	En AHo	MFL REI	Hum AMo	HumJGe	MFL EGe	TecA AKe	TecA RWh	TecA WPe	TecA CRa	
TUE 9	ScA RCo	ArNSu	MFL REI	ScB LYa	Mu SMi	Dr ROu	MuDCh	Re ReA	MFL KCo	
TUE 10	ScA RCo	Ar NSu	MFL REI	ScB LYa	Mu SMi	Dr ROu	Mu #Mu	Re ReA	MFL KCo	
WED 1	Hum JGe	Re MGr	MuDCh	MFL KCo	Hum SBr	ICT ABr	Re ReA	Ar CHa	En LLi	
WED 2	HumJGe	Re MGr	MuDCh	MFL KCo	Hum SBr	ICT ABr	Re ReA	Ar CHa	En LLi	
WED 3	ScB SWH	ScB RCo	En DRo	ScB LYa	ScA GBr	Hum NSh	Dr ROu	En KAd	ScB #Sc	
WED 4	ScB SWH	ScB RCo	En DRo	ScB LYa	ScA GBr	Hum NSh	Dr ROu	En KAd	ScB #Sc	
WED 5	Game JRo	Game PBr	Game LSa	Game LRo	Game MMc	En KAd	En HAI	MFL REI	Re ARo	
WED 6	Game JRo	Game PBr	Game LSa	Game LRo	Game MMc	En KAd	En HAI	MFL REI	Re ARo	
WED 7	En AHo	ICT JTa	ICT #I3	Dr ROu	En DRo	ArNSu	Hum SBr	Re ReA	MFL KCo	
WED 8	En AHo	ICT JTa	ICT #I3	Dr ROu	En DRo	ArNSu	Hum SBr	Re ReA	MFL KCo	
WED 9	MFL REI	En HAI	ScB LYa	En KAd	MFL EGe	TecB AKe	TecB RWh	TecB WPe	TecB CRa	
WED 10	MFL REI	En HAI	ScB LYa	En KAd	MFL EGe	TecB AKe	TecB RWh	TecB WPe	TecB CRa	
THU 1	Re MGr	ScB RCo	ScB LYa	ІСТ ЈКЬ	ReJCa	Game JRo	Game LSa	Game LRo	Game MM	
THU 2	Re MGr	ScB RCo	ScB LYa	ІСТ ЈКЬ	ReJCa	Game JRo	Game LSa	Game LRo	Game MM	
THU 3	Game JRo	Game PBr	Game LSa	Game LRo	Game MMc	En KAd	En DRo	Re ReA	EnLLi	
THU 4	Game JRo	Game PBr	Game LSa	Game LRo	Game MMc	En KAd	En DRo	Re ReA	EnLLi	
THU 5	Math GSc	MathJMc	Math KMa	Math MCr	Math KCe	MFL KCo	Hum SBr	MFL REI	Hum AMo	
THU 6	Math GSc	MathJMc	Math KMa	Math MCr	Math KCe	MFL KCo	Hum SBr	MFL REI	Hum AMo	
<u>THU 7</u>	TecA AKe	TecA RWh	TecA WPe	TecA CRa	TecA TCu	ReSBu	MFL KCo	En KAd	ReARo	
	TecA AKe	TecA RWh	TecA WPe	TecA CRa	TecA TCu	ReSBu	MFL KCo	En KAd	ReARo	
THU 9	HumJGe	ReMGr	ScA LYa	He SBu	ScB RCo	Math SMc	Math CCa	MathJMc	Math GHa	
THU 10	HumJGe	ReMGr	ScALYa	ReSBu	ScB HCo	Math SMc	Math CCa	MathJMc	Math GHa	
FRI 1	MuDCh	MFL REI	En DRo	HumJGe	Ar NSu	Game JRo	Game LSa	Game LRo	Game MM	
FRI 2	MuDCh	MFL REI	En DRo	HumJGe	ArNSu	Game JRo	Game LSa	Game LRo	Game MM	
FRI 3	En AHo	Dr VOB	Re ReA	Re MGr	EnDRo	MuDCh	ICT ABr	Mu SMi	Mu #Mu	
FRI 4	En AHo	Dr VOB	Re ReA	Re #R7	EnDRo	MuDCh	ICT ABr	Mu SMi	Mu #Mu	
FRI 5	ICT ABr	HumJGe	MFL REI	En KAd	Dr VOB	ScA JMo	MFL KCo	ІСТ ЈКЬ	DrROu	
FRI 6	ICT ABr	HumJGe	MFL REI	En KAd	Dr VOB	ScA JMo	MFL KCo	ІСТ ЈКЬ	DrROu	
FRI 7	Re MGr	En HAI	Hum AMo	ScA LYa	ReJCa	En KAd	Ar CHa	ScB GBr	ScA RCo	
FRI 8	Re MGr	En HAI	Hum AMo	ScA LYa	ReJCa	En KAd	Ar CHa	ScB GBr	ScA RCo	
	IAr NSu	IScA RCo	Dr VOB	MFL KCo	ICT ABr	ScB LYa	En HAI	Hum SBr	ICT MMi	
FRI 9	A NOT									

The end result of using Teacher Pools might result in a table like this:

In this case year 7 is the lowest form in this school and Teacher Pools are used to an extreme extent here. The green, yellow and red colours shall be interpreted this way:

Green: This subject has same teacher in all periods.

Yellow: Subject is lectured by two (or more) teachers.

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Red: This period is currently lacking a teacher

We can continue with this table a little. We notice that 7S4 in lacking teacher in RE in FRI 4. We select this period **and also all pools able to teach RE.** We get this selection:

TP 1- Tplan	- St. Matthew	/'s [SM9]	[Registere	d version]				2		- 🗆 🗙		
<u>F</u> iles <u>E</u> dit	Form <u>a</u> ts F	unctions	C <u>o</u> ntrol	<u>R</u> un <u>M</u>	aintenanc	e Com <u>p</u>	ressed <u>H</u>	<u>l</u> elp				
	🖻 🔒 🔍	Þ	P		∍₽₽							
School Tea	achers Teach	ner pools	Classes R	ooms Sut	ojects Blo	cks Perio	ds Steerin	g Compress	ed Selection	Full Text		
Selection	754	MGr	JCa	SBu	KMc	ARo	ReA	ROu	#R7	#R8 #R9		
MON 1	TecB CRa	9S1 Re	9T3 Re	8S5 Re	9S2 Re	7T4 Re	8T1 Re	8S2 Re		8S4 Re		
MON 2	TecB CRa	9S1 Re	9T3 Re	8S5 Re	9S2 Re	7T4 Re	8T1 Re	8S2 Re		8S4 Re		
MON 3	Math MCr		1T1 Re	1T1 Re	1T1 Re		7T2 Re	OSI Op3A				
MON 4	Math MCr		1T1 Re	1T1 Re	1T1 Re		7T2 Re	0S1 Op3A				
MON 5	Re SBu		7S5 Re	7S4 Re	8S3 Re	8T3 Re	7S3 Re	8S1 Re				
MUN 6	He SBu	702 D.	755 He	7S4 Re	853 He	813 He	753 He	851 He				
		752 He 702 De	OMI Re	OMI Re		OMI Re						
	Ell #Er Mu DCh	952 Re	1M1 Ro	7T1 Be	1M1 Ro	1M1 Ro		791 Dr				
MON 10	Mu DCh	0T1 Be	7T1 Be	953 Be	0T1 Be	ilen ne	0T1 Be	751 Dr				
	Ar NC.	OT1 Do		7T1 Po	OT1 Do	9T1 Do	OT1 Do	10101				
THE 2	Ar NSu	0T1 Be		7T1 Be	0T1 Be	9T1 Be	0T1 Be					
THE 3	En KAd	7S1 Be	9T3 Be	9T4 Be	8S2 Be	VIIIe	7S3 Be					
TUE 4	En KAd	7S1 Be	9T3 Be	9T4 Be	852 Be		753 Be					
TUE 5	Math MCr	9S3 Be	1T1 Be	1T1 Be	1T1 Be		7T2 Be	8T4 Be				
TUE 6	Math MCr	9S3 Re	1T1 Re	1T1 Re	1T1 Re		7T2 Be	8T4 Re				
TUE 7	Hum JGe	8T2 Re	1M1 Re		1M1 Re	1M1 Re						
TUE 8	Hum JGe	8T2 Re	1M1 Re		1M1 Re	1M1 Re						
TUE 9	ScB LYa	1S1 Re	1S1 Re	9T2 Re	1S1 Re		7T3 Re	7T1 Dr				
TUE 10	ScB LYa	1S1 Re	1S1 Re	9T2 Re	1S1 Re		7T3 Re	7T1 Dr				
VED 1	MFL KCo	7S2 Re	0M1 Re	0M1 Re	8T2 Re	0M1 Re	7T2 Re	8T4 Re				
VED 2	MFL KCo	7S2 Re	0M1 Re	0M1 Re	8T2 Re	0M1 Re	7T2 Re	8T4 Re				
VED 3	ScB LYa	0T1 Re		9T4 Re	0T1 Re	9T1 Re	0T1 Re	7T2 Dr				
VED 4	ScB LYa			9T4 Re		9T1 Re		7T2 Dr				
VED 5	Game LRo	9S1 Re	8S1 Re	8T3 Re	8S3 Re	7T4 Be	8T1 Re	9S2 Dr				
VED 6	Game LRo	9S1 Re	8S1 Re	8T3 Re	8S3 Re	7T4 Re	8T1 Re	9S2 Dr				
VED 7	Dr ROu	1S1 Re	1S1 Re	9T2 Re	1S1 Re		7T3 Re	7S4 Dr				
VED 8	Dr ROu	1S1 Re	1S1 Re	9T2 Re	1S1 Re		7T3 Re	7S4 Dr				
VED 9	En KAd	0S1 Re		0S1 Re		9S4 Re	0S1 Re	953 Dr				
VED 10	En KAd	US1 Re		US1 Re		954 He	USI Re	953 Dr				
THU 1	ІСТ ЈКЬ	7S1 Re	7S5 Re	8S5 Re	8S3 Re							
THU 2	ІСТ ЈКВ	751 He	755 He	855 He	853 He	004 D	770.0-	004 D-	-			
	Game LHO	353 He	854 He	002 Da	101 D .	954 He	713 He	851 He		904 De		
	Math MCr	IST Re	1M1 Do	0S1 Pa	1M1 Do	1M1 Do	ISI Ba	oorne		031 118		
THUS	Math MCr	0S1 Be	1M1 Be	0S1 Be	1M1 Be	1M1 Be	0S1 Be					
THU 7	TecA CBa	9S1 Be	9T3 Be	7T1 Be	8S2 Be	7T4 Be	8T4 Be	8S3 Dr				
THU 8	TecA CRa	9S1 Re	9T3 Re	7T1 Re	8S2 Re	7T4 Be	8T4 Re	8S3 Dr				
THU 9	Re SBu	7S2 Re		7S4 Re	9S2 Re	8T3 Re	8T1 Re	9T4 Dr				
THU 10	Re SBu	7S2 Re		7S4 Re	9S2 Re	8T3 Re	8T1 Re	9T4 Dr				
FBI 1	Hum JGe	0T1 Re		9T4 Re	0T1 Re		0T1 Re					
FRI 2	Hum JGe	0T1 Re		9T4 Re	0T1 Re		0T1 Re					
FBI 3	Re MGr	7S4 Re		9T2 Re		9T1 Re	7S3 Re					
FRI 4	Re #R7	9T2 Re	1T1 Re	1T1 Re	1T1 Re	9T1 Re	7S3 Re		7S4 Re			
FRI 5	En KAd	0S1 Re		0S1 Re			0S1 Re	7T4 Dr				
FRI 6	En KAd	0S1 Re		0S1 Re			0S1 Re	7T4 Dr				
FBI 7	ScA LYa	7S1 Re	7S5 Re	8S5 Re	9S2 Re	9S4 Re	8S4 Re	0M1 OpM1				
FRI 8	ScA LYa	7S1 Re	7S5 Re	8S5 Re	9S2 Re	9S4 Re	8S4 Re	0M1 OpM1				
FRI 9	MFL KCo	8T2 Re	0M1 Re	0M1 Re		0M1 Re		8S1 Dr				
FRI 10	FRI 10 MFL KCo 8T2 Re 0M1 Re 0M1 Re 0M1 Re 0M1 Re											
SELECT 75	4 SBu Re	CAT: 4	THU 9									

We get the class 7S4, all teachers being able to teach RE and to the right we see all requirements to pools teaching RE and still not being assigned to some real teacher. We can easily solve FRI 4 by using teacher Rou and just drag 7S4 to Rou. The remainder is not solved by this figure and I skip continued work.

However, there is a further important point with the above figure: Even if you are not using teacher pools at all you may be well served by creating selections like the one above to create survey of possible teachers in case you must do some teacher changes.

As mentioned Teacher Pools has not been the focus of my interest while developing drag/drop. My current attitude to Teacher Pools is as follows:

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- I am a firm believer in the value of using Teacher Pools in some contexts. Currently the most typical case is as follows: In a UK school you have complex upper forms with components and many large blocks and several compromises must eventually be done. In the lower forms there is a lot of freedom for deciding the teacher work load and there are also a lot of pure class acts. Considerable freedom for the upper forms may be achieved by using Pool Teachers in lower forms; in particular in subjects with few periods. (For the moment I am very sceptical to Pools in subjects with many periods, but that might improve in the future.)
- MY MAIN CONCERN FOR MORE THAN 3 YEARS HAS BEEN REORGANSATION OF INTERNAL DATA STRUCTURE AND DRAG/DROP TECHCIQUES WHILE TEACHER POOLS HAS DEFINITELY BEEN IGNORED. I DEFINITELY SEE THAT THE NEW DATA STRUCTURE WILL HAVE CONSIDERABLE POSITIVE EFFECTS ON THE TEACHER POOL – MECHANISM. TIME HAS NOT PERMITTED ME TO EXPLOIT THAT; JUST NOW I AM AFRAID THAT THERE MIGHT BE LOUSY BUGS. HOPEFULLY I MIGHT BE ALLOWED TO CHECK THAT IN THE NEXT FEW WEEKS (MONTHS).

May 29, 2011 Harald Michalsen