

BAAN IV

BaanSync Scheduler 6.0 Interface User Manual

A publication of:

Baan Development B.V.
P.O.Box 143
3770 AC Barneveld
The Netherlands

Printed in the Netherlands

© Baan Development B.V. 1998.
All rights reserved.

The information in this document is subject to change without notice. No part of this document may be reproduced, stored or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Baan Development B.V.

Baan Development B.V. assumes no liability for any damages incurred, directly or indirectly, from any errors, omissions or discrepancies between the software and the information contained in this document.

Document Information

Code: U7059C US
Group: User Documentation
Edition: C
Date: March 1998

Table of contents

1	Introduction	1-1
2	Interface rules	2-1
	General	2-1
	<i>Discrete and process</i>	2-3
	<i>Discrete</i>	2-3
	<i>Process</i>	2-3
	<i>Constraints</i>	2-3
3	How the interface works	3-1
	<i>Export – BAAN to BaanSync Scheduler</i>	3-1
4	Procedure data flow	4-1
	Transaction data	4-3
5	List of sessions	5-1
	Common	5-2
	<i>Maintain Employees (tccom0101m000)</i>	5-2
	<i>Maintain Machines (tirou0102m000)</i>	5-3
	Interface (BCL) sessions	5-4
	<i>Maintain BCL Parameters (tibcl0100m000)</i>	5-4
	<i>Maintain Setup States by Operation (tibcl0156m000)</i>	5-5
	<i>Maintain Setup States by Production Planning (tibcl0183m000)</i>	5-6
	<i>Maintain Qualified Teams by Task (tibcl0174m000)</i>	5-7
	<i>Maintain Qualified Teams by Operation (tibcl0175m000)</i>	5-8
	<i>Maintain Qualified Teams by Production Planning (tibcl0176s000)</i>	5-9
	<i>Maintain Detailed Planning Production (tibcl0184m000)</i>	5-11
	<i>Maintain Detailed Planning Employees (tibcl0185m000)</i>	5-12
	<i>Maintain Detailed Planning Tools (tibcl0186m000)</i>	5-13
	<i>Maintain Operation Relationships (tibcl0189m000)</i>	5-14
	<i>Maintain Operation Relationships by Order (tibcl0192m000)</i>	5-15
	<i>Maintain Path for Dumps (tibcl0190m000)</i>	5-16
	<i>Export Data (tibcl0295m000)</i>	5-17
	<i>Insert Data into BaanSync Scheduler (tibcl1291m000)</i>	5-22
	<i>Schedule Orders in BaanSync Scheduler (tibcl0294m000)</i>	5-23
	<i>Generate data from BaanSync Scheduler (tibcl1284m000)</i>	5-24
	<i>Import data from BaanSync Scheduler (tibcl0285m000)</i>	5-25

Routings	5-28
<i>Maintain Tasks (tirou0103m000)</i>	5-28
<i>Maintain Routing (tirou2110m000)</i>	5-30
<i>Maintain Customized Routing (tipcs2170m000)</i>	5-32
<i>Maintain Routing Operations (psrou2110m000)</i>	5-34
Production Orders/Planning	5-36
<i>Maintain Production Orders (tisfc0101m000)</i>	5-36
<i>Maintain Production Planning (tisfc1101m000)</i>	5-37
Production Batch/Planning	5-39
<i>Maintain Production Batches (pspmg0101m000)</i>	5-39
<i>Maintain Estimated Batch Planning (pspmg2100m000)</i>	5-40

About this document

This document provides the user with an overview of the BAAN IV - BaanSync Scheduler 6.0 Interface. In particular this document describes the assumptions and constraints of the Interface, the mechanics of Import-Export, the procedure for implementation, and a description of the individual sessions created for the interface.

Chapter 1 provides a brief introduction to the interface.

Chapter 2 describes the assumptions the developers made when they created the interface and the associated constraints.

Chapter 3 describes the mechanics of Import-Export, the data flow procedure between BAAN and BaanSync Scheduler.

Chapter 4 describes the procedure for implementing the Interface.

Chapter 5 describes the sessions that have been created for the interface as well as some important sessions in the standard BAAN IVc that have been modified for the interface.

1 Introduction

This document explains the functions of the BAAN IV-BaanSync Scheduler 6.0 interface and the constraints associated with it. This document should be used by persons knowledgeable in BAAN and BaanSync Scheduler.

This interface was developed on BAAN IV and interacts with BaanSync Scheduler 6.0.

The user must read the next chapter, Interface rules, before using the interface.

The data transfer is performed using ASCII files.

2 Interface rules

There are certain assumptions made in this interface, and these assumptions are listed below.

General

- All the activities in this document conform to those mentioned in the Post Installation Guide have been followed.
- All the required default data for this interface was created in BaanSync Scheduler (specified in the Configuration Guide).
- The user must not use any special characters in the codes of any BAAN session. This is because BaanSync Scheduler does not accept any special characters.

These special characters include:

Name	Character
Tilde	~
Apostrophe	'
Exclamation	!
At the rate sign	@
Hash	#
Dollar	\$
Percentage	%
Caret	^
Ampersand	&
Asterix	*
Opening/closing braces	{ }
Opening/closing parentheses	()
Opening/closing brackets	[]
Front/back slash	/ \
Question mark	?
Lesser than/Greater than	< >
Equal to	=
Single quote	'
Double quotes	"
Plus	+
Pipe	
Colon	:
Semi-colon	;
Comma	,
Underscore	_

NOTE: The user should not use the double quotes (") in the description field of any session.

Discrete and process

- A record will exist for all manufactured items(Standard and Process) in the Maintain Routing codes by Item (tirou1102m000) and Maintain Routing codes by Formula (psrou1102m000) sessions.
- The net quantity for items used in BOMs (Standard, Customized, Process) should be greater than zero.
- Cost items will not be transferred to BaanSync.
- In case the BOM unit of measurement is different from the Inventory unit of measurement, the BOM quantity is converted to the Inventory unit of measurement using the conversion factor defined in BAAN.
- The user should use the field Transfer Lot Size to indicate operation overlaps instead of using the Overlap % field.
- A routing with at least one operation will have to be created for Phantom Manufactured items.
- Whenever a Production Order is completed in BAAN, the same will be deleted from BaanSync Scheduler.

Discrete

When a generic routing is copied to customized routing, the user will have to maintain the Operation relationships.

Process

- In case Formulas in Process are deleted, the Routings should be deleted before deleting the Formula.
- An item can only be assigned once to an operation as either consumption or production.
- The item defined in IRP and the Item Master should be the same.

Constraints

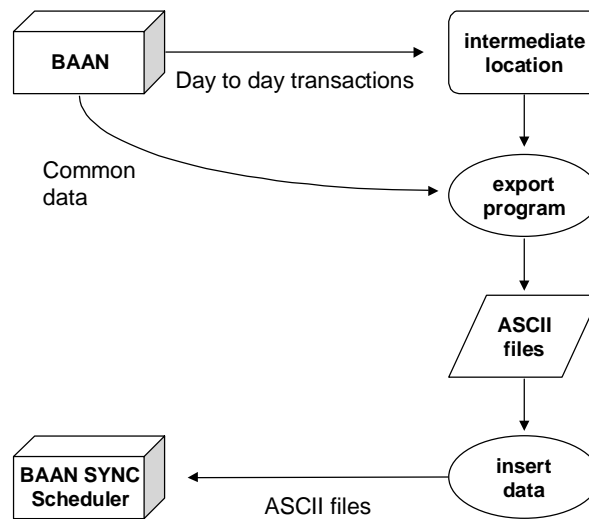
- Lot selection functionality is not supported.
- QMS integration is not supported.

3 How the interface works

The objective of the interface is to use ASCII files to transfer data from BAAN to BaanSync Scheduler and vice-versa. The transfer of data will always be performed in batch mode.

Export – BAAN to BaanSync Scheduler

This section explains the mechanism of exporting data from BAAN to BaanSync Scheduler.



The following data shown in the diagram above is transferred to BaanSync Scheduler:

- Day to day transactions
- Common data

Day to day transactions

All transactions entered in the system since the installation of the interface will be recorded in an intermediate location. To reduce the processing time, the transactions will be transferred from this location when the Export program is run.

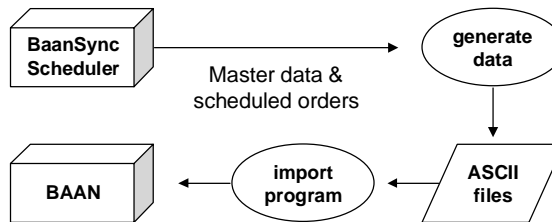
Common

Common data transfer involves the transfer of existing BAAN data, for example, Employees, Machines, Items and so on. This option should be used in case the interface is installed over an existing BAAN application. The common data is retrieved by the Export program directly from the BAAN tables rather than the Intermediate location.

For details of how the individual sessions function, refer to the corresponding session in chapter 5 List of Sessions.

Import – BaanSync Scheduler to BAAN

This section explains the mechanism of importing data from BaanSync Scheduler to BAAN.



The diagram above illustrates the way in which the data is imported from BaanSync Scheduler to BAAN. The Master data imported from BaanSync Scheduler consists of the Qualified teams, Tools, Setups and the Resources by Qualified team. The Scheduled order data consists of the MPS/MRP/PRP/SFC/PMG orders and the Purchase recommendations.

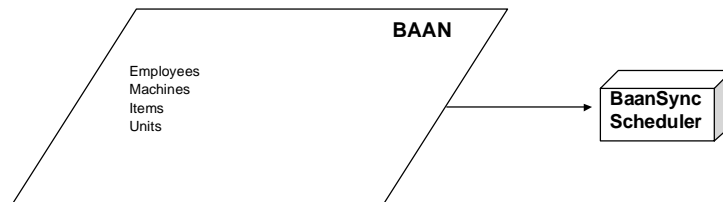
The BaanSync Scheduler Master data and the Scheduled order data are first generated by the Generate data from BaanSync Scheduler (tibcl1284m000) session. This data is stored in ASCII files created in the directory specified in the Maintain Path for Dumps (tibcl0190m000) session.

The ASCII files created above are picked up by the Import Data from BaanSync Scheduler (tibcl0285m000) session to update the BAAN tables. This session uses the Exchange utility to insert the data into BAAN.

Errors encountered by the Exchange and the import data session are recorded in the log file created in the path specified in the Maintain Exchange Schemes (tuxch0101m000) session.

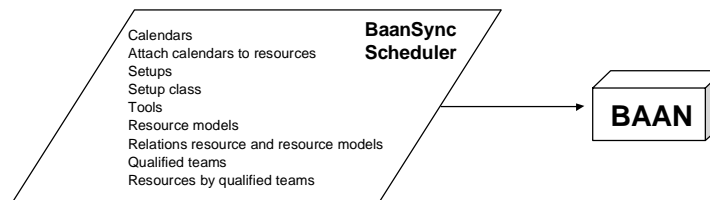
4 Procedure data flow

This chapter explains the procedure or sequence the user should use while entering and transferring data from BAAN to BaanSync Scheduler and vice-versa.



The step above is necessary when the Interface is installed over an existing implemented BAAN system.

The above data should be transferred using the common data option in the Export Data (tibcl0295m000) session.

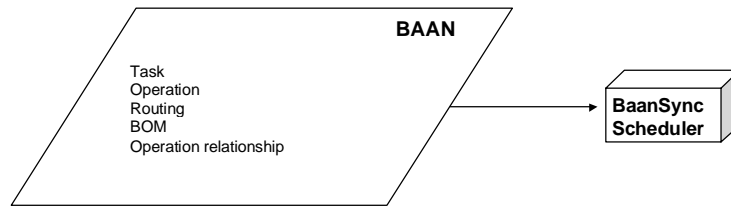


As shown in the diagram above, the Calendars should be entered in BaanSync Scheduler and attached to each Resource, such as Employee or Machine. The Setup Classes, Setups, Tools, Resource Models and Relation resource and resource models should be defined in BaanSync Scheduler.

The Qualified teams should be defined in BaanSync Scheduler, and the appropriate resources should be attached to the Qualified teams.

The data entered above should be transferred to BAAN using the Import Data (tibcl0185m000) session.

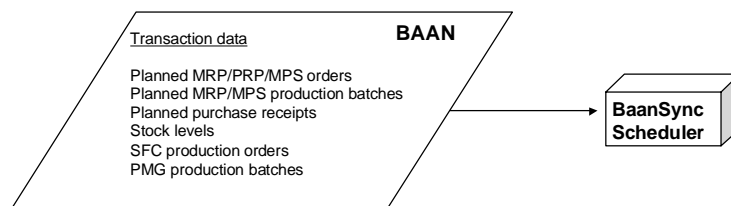
The above mentioned data can only be viewed in BAAN and not Maintained.



If tasks and operations already exist, the Qualified teams imported from BaanSync Scheduler should be attached to the Baan Tasks and Operations. If new tasks are created the Qualified teams should only be attached to that task. When these tasks are used in the routing to define operations, the Qualified teams will be copied automatically.

You must attach Qualified teams to an Operation, otherwise the data cannot be loaded into BaanSync Scheduler.

For each routing in BAAN, you must maintain the Operation Relationships by using the Maintain Operation Relationships (tibcl0189m000) and Maintain Operation Relationships by Order (tibcl0192m000) sessions. These sessions enable the user to maintain the operations sequence in a routing. By using these sessions, the user can define convergent and divergent routings in the discrete manufacturing setup and the predecessor/successor relationships in BaanSync Scheduler.



Transaction data

Production Orders

All planned MRP/MPS/PRP production orders along with the MRP/MPS production batches with status Planned, Firm Planned and Confirmed will be transferred as Manufacturing Orders to BaanSync Scheduler. The SFC production orders and the PMG production batches will also be transferred to BaanSync Scheduler.

All production orders will be transferred for a given time fence which can be defined in the Maintain BCL Parameters (tibcl0100m000) session. The time fence period should be specified by number of days.

Purchase Orders

The planned MRP/PRP/MPS purchase orders generated by the system will not be transferred to BaanSync Scheduler.

The planned purchase receipts will be transferred as actual purchase orders to BaanSync Scheduler.

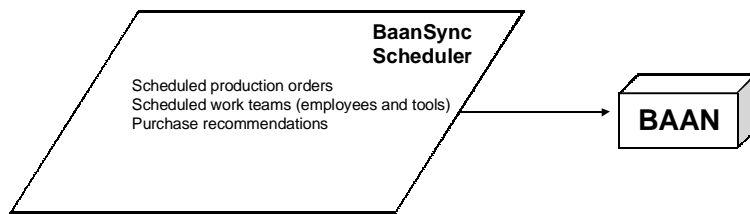
Stock Levels

The latest stock levels will be transferred to BaanSync Scheduler everytime a stock transaction takes place in BAAN.

Production Feedback

The production feedback will be transferred to BaanSync Scheduler as soon as the user enters some information (quantity produced/rejected) in the system. While providing feedback the user can modify the resource with which the operation was completed.

The production feedback will be transferred to BaanSync Scheduler on the basis of the work teams sent back from BaanSync Scheduler after scheduling.



The Planned orders sent from BAAN will be scheduled in BaanSync Scheduler. The data mentioned above will be transferred from BaanSync Scheduler to BAAN and updated in the respective tables. The Purchase recommendations will be updated in the Planned MPS/MRP/PRP purchase order tables.

5 List of sessions

This chapter lists the sessions that have been modified to accept the data required by BaanSync Scheduler. Sessions that need enumeration are also discussed in this chapter.

The sessions listed in this section are organized on the basis of functionality:

- Common
- Interface (BCL) sessions
- Routings
- Production Orders/Batches
- Production Order/Batch Planning

Common

Maintain Employees (tccom0101m000)

Session objective

To maintain Employees (BaanSync Scheduler Data).

How to use the session

This forms allows the user to maintain BaanSync Scheduler Data.

For individual field help, refer to the on-screen Help.

tccom0101m000 : Maintain Employees [555]

File Edit Group Options Order Tools Special Help

Form 1 Form 2 Baan Sync.Data

Employee 10

Experience Time 5 day

Time Losses Weight 2.00

Transfer Status Modified

Text No

Maintain Machines (tirou0102m000)

Session objective

To maintain Machines (BaanSync Scheduler Data).

How to use the session

This form allows the user to maintain BaanSync Scheduler Data.

For individual field help, refer to the on-screen Help.

The screenshot displays the 'Maintain Machines' form. The window title is 'tirou0102m000 : Maintain Machines [555]'. The menu bar includes 'File', 'Edit', 'Group', 'Options', 'Order', 'Tools', 'Special', and 'Help'. The toolbar contains icons for file operations, navigation, and help. The form has two tabs: 'Form 1' and 'Baan Sync. Data'. The 'Baan Sync. Data' tab is active, showing fields for Machine (1), Machine Utilisation (0), Dynamic Buffer (0), Setup Weight (0.00), Gradation Weight (0.00), Time losses weight (0.00), Batching Max. (0), Batching Min. (0), Transfer Status, and Text (No).

Interface (BCL) sessions

Maintain BCL Parameters (tibcl0100m000)

Session objective

To maintain BCL Parameters.

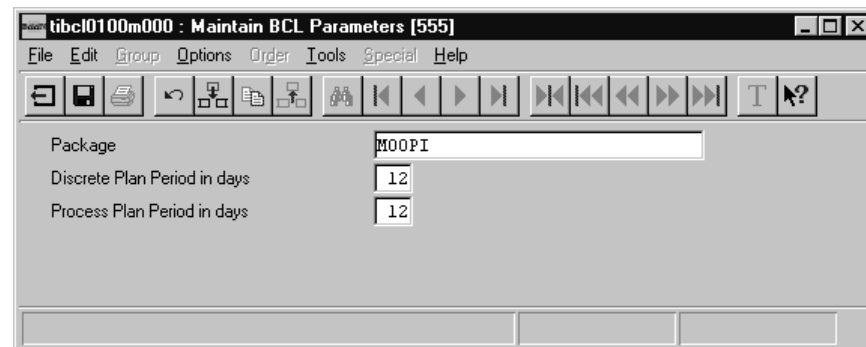
How to use the session

This session enables the user to maintain the parameters required to execute the various sessions in the Interface.

The data in this table should be created at the time the interface is implemented. A detailed description of the data to be entered in this table is explained in the document Post Installation Guide which is supplied as part of this interface.

The Package field should always contain the value BaanSync Scheduler.

For a detailed description of the other fields on the form, refer to each field's individual Help.



Package	MOOPI
Discrete Plan Period in days	12
Process Plan Period in days	12

Maintain Setup States by Operation (tibcl0156m000)

Session objective

To maintain Setup states for an Operation.

How to use the session

This session enables the user to maintain the Setup states for an Operation.

This session is common for all types of Routing such as Standard, Customized and Process. The field Item Type indicates whether the operation is Standard, Customized or Process.

There can be only one setup state for a given class.

The Setup states defined here will be copied automatically when a production order is created. This process applies to both SFC and PMG orders.

For a detailed description of the other fields on the form, refer to each field's individual Help.

Maintain Setup States by Production Planning (tibcl0183m000)

Session objective

To maintain Setup states for an Operation in a Production Order/Batch.

How to use the session

This session enables the user to maintain the Setup states for an Operation.

In addition, this session is common for both Production Orders SFC and Production Batches PMG.

The field Item Type identifies whether the operation is Standard, Customized or Process.

There can be only one setup state for a given class.

The Setup states defined here are copied automatically from the Maintain Setup states by Operation (tibcl0156m000) session whenever a production order is created. This process applies to both SFC and PMG orders.

The setup data defined here can be maintained only by zooming through the Maintain Estimated Batch Planning (pspmg2100m000) and Maintain Production Planning (tisfc1101m000) sessions.

tibcl0183s000 : Maintain Setup States by Production Planning [019]

File Edit Group Options Order Tools Special Help

Production Order 100001

Operation 10

Project

Routing 0 Routing

Item MMM Anoniem maakdeeltje

Item Type Standard

Setup State Class

last

For a detailed description of the other fields on the form, refer to each field's individual Help.

Maintain Qualified Teams by Task (tibcl0174m000)

Session objective

To maintain Qualified teams for a Task.

How to use the session

This session enables the user to maintain the Qualified teams for a Task.

The Qualified teams defined for a Task in this session are copied automatically when an Operation is created in a Routing. This process applies to Standard, Customized and Process routings.

The Qualified teams for a Task can also be maintained by using the <Ctrl> [G] option in the Maintain Tasks (tirou0103m000) session.

Qualified Team	Prod. Rate Qty	Prod. Rate Dur.	Time Unit	Fixed Dur.	Time Unit	Setup Dur.	Time Unit	C.U.	Transfer Status
DRILL	500	1	Hr.	0	Day	0	Day	1	Added

For a detailed description of the other fields on the form, refer to each field's individual Help.

The fields Prod.Rate Qty, Prod.Rate Dur. and Time Unit can be entered only if the Operation type in the Task is Standard or Synchronised Batching. The fields Fixed Dur. and Time Unit can be entered only if the Operation type in the Task is Fixed Duration.

NOTE:

The user must maintain the Qualified teams for a task. Also, the user cannot insert the operation data into BaanSync Scheduler if the Qualified team is not attached to a Task.

Maintain Qualified Teams by Operation (tibcl0175m000)

Session objective

To maintain Qualified teams for an Operation.

How to use the session

This session enables the user to maintain the Qualified teams for an Operation.

The Qualified teams for an Operation are copied from the Maintain Qualified teams by Task (tibcl0174m000) session when an Operation is created using a task.

This process applies to Standard, Customized and Process routings.

The Qualified teams can also be maintained by using the <Ctrl> [G] option in the Maintain Routing (tirou2110m000), Maintain Customized Routing (tipcs2170m000) and Maintain Routing Operations (psrou2110m000) sessions.

For a detailed description of the form's other fields, refer to each field's individual Help.

The fields Prod.Rate Qty, Prod.Rate Dur. and Time Unit can be entered only if the Operation type in the Operation is Standard or Synchronised Batching. The fields Fixed Dur. and Time Unit can be entered only if the Operation type in the Operation is Fixed Duration.

NOTE:

The user must maintain the Qualified teams for an Operation. Also, the user cannot insert the operation data into BaanSync Scheduler if the Qualified team is not attached to an Operation.

Qualified Team	Prod. Rate	Prod. Rate Qty	Time Unit	Fixed Dur.	Time Unit	Setup Dur.	Time Unit	C.U.	Transfer Status
3-CUTTING	350	1	Hr.	0	Day	15	Min.	1	Added

Maintain Qualified Teams by Production Planning (tibcl0176s000)

Session objective

To maintain Qualified teams for an Operation in a Production plan.

How to use the session

This session enables the user to maintain the Qualified teams for an Operation in a Production order/batch.

The Qualified teams for an Operation are copied from the Maintain Qualified teams by Operation (tibcl0175m000) session when a Production order/batch is created.

This process applies to both SFC orders and PMG batches.

The Qualified teams can also be maintained using the <Ctrl> [G] option in the Maintain Production Planning (tisfc1101m000) and Maintain Estimated Batch Planning (pspmg2110m000) sessions.

For a detailed description of the form's other fields, refer to each field's individual Help.

The fields Prod.Rate Qty, Prod.Rate Dur and Time Unit can be entered only if the Operation type in the Operation is Standard or Synchronised Batching. The fields Fixed Dur. and Time Unit can be entered only if the Operation type in the Operation is Fixed Duration.

NOTE: The user must maintain the Qualified teams for an Operation. Also the user cannot insert the operation data into BaanSync Scheduler if the Qualified team is not attached to a Operation.

tbcl0176s000 : Maintain Qualified Teams by Production Planning [999]

File Edit Group Options Order Tools Special Help

Production Order/Batch 1

Operation 10

Project

Routing 990001 TEST MRP PROD

Item TEST-MRP-B Test MRP item modified

Item Type Standard

Qualified Team

Prod. Rate Qty	Prod. Rate Dur	Time Unit	Fixed Dur.	Time Unit	Setup Dur.	Time Unit	C.U.	Tr. St.
QT-0B01	5	1	Hr.	0	Day	0	Day	1

Cancel

Maintain Detailed Planning Production (tibcl0184m000)

Session objective

To maintain details of Machines per operation scheduled by BaanSync Scheduler.

How to use the session

This session enables the user to change the Machines scheduled by BaanSync Scheduler for an Operation. The user can modify the scheduled data sent by BaanSync Scheduler in case a different Machine has been used to perform an operation. This data is sent back to BaanSync Scheduler when the Production Feedback is entered.

For a detailed description of the other fields on the form, refer to each field's individual Help.

Team	Team Status	Machine	Duration	Duration Unit
14	Prd	MAC1	120	Hr.

Maintain Detailed Planning Employees (tibcl0185m000)

Session objective

To maintain details of Employees per operation scheduled by BaanSync Scheduler.

How to use the session

This session enables the user to change the Employees scheduled by BaanSync Scheduler for an Operation. The user can modify the scheduled data sent by BaanSync Scheduler in case a different Employee has been used to perform an operation. This data is sent back to BaanSync Scheduler when the Production Feedback is entered.

For a detailed description of the other fields on the form, refer to each field's individual Help.

The screenshot shows a software window titled 'tibcl0185m000 : Maintain Detailed Planning Employees [999]'. The window has a menu bar with 'File', 'Edit', 'Group', 'Options', 'Order', 'Tools', 'Special', and 'Help'. Below the menu is a toolbar with various icons for file operations and navigation. The main area of the form contains the following fields:

- Production Order: SFC/MAN/000001
- Operation: 10
- Team: 20 Status: Prd

Below these fields is a table with the following columns: Employee, Employee Name, Start Date, /Time, End Date, /Time. The first row of the table is populated with the following data:

Employee	Employee Name	Start Date	/Time	End Date	/Time
2	Praveen Chand	13-10-1997	08:10	13-10-1997	10:10

At the bottom of the window, there are three empty rectangular boxes.

Maintain Detailed Planning Tools (tibcl0186m000)

Session objective

To maintain details of Tool per work operation scheduled by BaanSync Scheduler.

How to use the session

This session enables the user to change the Tool scheduled by BaanSync Scheduler for an Operation. You can modify the scheduled data sent by BaanSync Scheduler in case a different Tool performed an operation. This data is sent back to BaanSync Scheduler when the Production Feedback is entered.

For a detailed description of the other fields on the form, refer to each field's individual Help.

Tool	Tool Description	Start Date	/Time	End Date	/Time
TOOL1	TOOL	10-09-1999	08:54	11-09-1999	10:06
TOOL2	Tool	10-09-1999	08:54	11-09-1999	10:06

Maintain Operation Relationships (tibcl0189m000)

Session objective

To maintain relationships between operations.

How to use the session

This session enables the user to maintain the relationship between various operations and is applicable to Standard and Customized routings. The existing routings and Production planning in BAAN offer only Sequential routings. With this session the user can define convergent and divergent routings in other words, parallel operations. This defined data will be reflected in BaanSync Scheduler. The operation relationships must be maintained by the user or will be generated by the system when a routing is created. The system generated relationships will be sequential.

The Operation relationships can also be maintained by zooming from the Maintain Routing tirou2110m000 and Maintain Customized Routing tipcs2170m000 sessions. To define the overlap percentage between operations, the user should enter an appropriate value in the field Transfer Lot Size.

For a detailed description of the other fields on the form, refer to each field's individual Help.

NOTE You must maintain the Operation relationships for a routing or operations in a Production order.

Maintain Operation Relationships by Order (tibcl0192m000)

Session objective

To maintain relationships between operations in a Production Order.

How to use the session

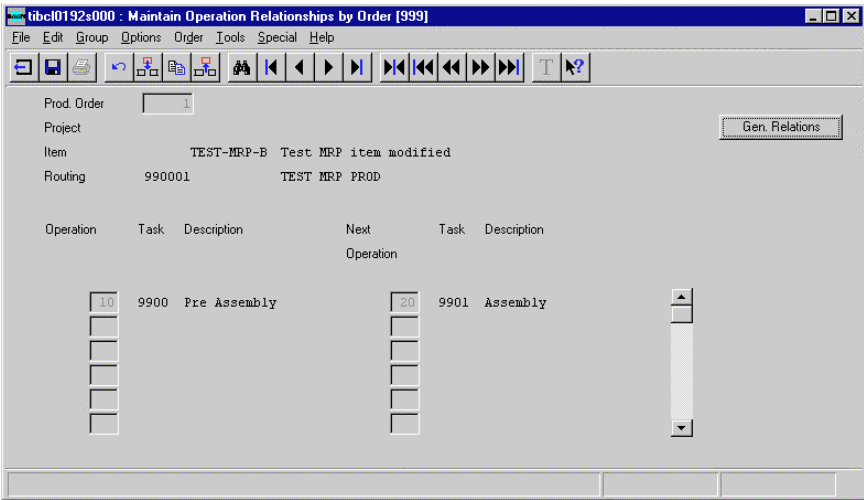
This session enables the user to maintain the relationship between various operations in a Production order. This session is applicable to SFC Production orders. The existing routings and Production planning in BAAN offers only Sequential routings. With this session, the user can define convergent and divergent routings i.e. define parallel operations in his routing. The defined data will be reflected in BaanSync Scheduler. The operation relationships have to be maintained by the user or will be generated by the system when a routing is created. The system generated relationships will be sequential.

The Operation relationships can also be maintained by zooming from the Maintain Production Planning (tisfc1101m000) and Maintain Production Order (tisfc0101m000) sessions.

To define the overlap percentage between operations, the user should enter an appropriate value in the field *Transfer Lot Size*.

If a production order is created using an existing routing, the operation relationships are automatically copied from the routing to the production order.

For a detailed description of the other fields on the form, refer to each field's individual Help.



The user must maintain the Operation relationships for a routing or operations in a Production order.

Maintain Path for Dumps (tibcl0190m000)

Session objective

To maintain the path for dumps.

How to use the session

This session enables you to maintain the directories in which the ASCII files for the Export and the Import will be created. You can also maintain the server addresses of the BAAN host system and the BaanSync Scheduler server. This maintenance enables the user to connect to different BaanSync Scheduler databases. There can be only one BaanSync Scheduler database for each company in BAAN.

You should also refer to the *Post Installation Guide* for more information regarding this session.

For a detailed description of the other fields on the form, refer to each field's individual Help.

tibcl0190m000 : Maintain Path For Dumps [555]

File Edit Group Options Order Tools Special Help

Environment: BSS

BAAN IV Path: /tmp/comp555

Baan Sync. Path: /tmp/comp555

BAAN Host Name: chanakya

SYNC Host Name: srv_ind_bomdev

add alphanum

Export Data (tibcl0295m000)

Session objective

To export data from BAAN to BaanSync Scheduler.

How to use the session

This session exports the data from BAAN into ASCII files.

tibcl0295m000 : Export Data [999]

File Edit Group Options Order Tools Special Help

Planned Order Date Discrete Upto: 28071997

Planned Order Date Process Upto:

Transfer Common Data: No

Employees: No

Machines: No

Items: No

Routings: No

Process previous transactions: No From: To: 08-07-1997

Processing For:

Continue Cancel

Date DMY

The form above shows that the export data session has a number of parameters with which the user can selectively export data.

Discrete plan period

This period is the date up to which the Planned MRP/MPS/PRP production orders will be exported to BaanSync Scheduler for scheduling. The Discrete plan period is specified in the Maintain BCL Parameters (tibcl0100m000) session. The date up to which production orders must be transferred is calculated as the current date plus the number of days specified in the session *Maintain BCL Parameters*.

Once transferred, the Planned production orders cannot be transferred again.

If the user needs to re-transfer the data again, then the field trfs-Transfer status in the tables Planned MPS Production orders (timps520), Planned MRP Production orders (timrp020) and Planned PRP Production orders (tipcs510) should be set to Added using the session ttaad4100.

Process Plan Period

This period is the last date that the Planned MRP/MPS production batches can be exported to BaanSync Scheduler for scheduling. The Process plan period is specified in the Maintain BCL Parameters (tibcl0100m000) session. The last date that the production batches can be transferred is calculated as the current date plus the number of days specified in the Maintain BCL Parameters session.

Once transferred, the Planned production orders cannot be transferred again.

If the user needs to transfer the data again, then the field trfs-Transfer status in the table Planned MPS/MRP Production batches (timrp022) should be set to Added using the ttaad4100 session.

All the production orders/batches generated using the MPS/MRP/PRP generation sessions are transferred to BaanSync Scheduler when the Export Data (tibcl0295m000) session is run.

Transfer Common data Yes/No

This option enables the user to transfer already existing data to BaanSync Scheduler. This option is necessary when data has to be transferred from an existing BAAN application that uses the Interface. If this option is selected, then all the existing data will be transferred in a single transfer to BaanSync Scheduler. This might result in huge data files to be inserted into BaanSync Scheduler.

The Common data transfer has the following options to selectively transfer data.

Machines Yes/No

This option enables the user to transfer all the Machines from BAAN to BaanSync Scheduler.

Employees Yes/No

This option enables the user to transfer all the existing Employees from BAAN to BaanSync Scheduler.

Items Yes/No

This option enables the user to transfer all the existing Items from BAAN to BaanSync Scheduler, including Standard, Customized and Process items. The Units will be transferred along with the Items.

Routings Yes/No

This option enables the user to transfer all the existing routings from BAAN to BaanSync Scheduler, including Standard, Customized and Process routings. Before transferring the routings the user must ensure that the Qualified teams are attached to all the operations in the routings and that the Operation relationships are defined for all the routings.

The BOM will be attached to each BAAN specified operation in BaanSync Scheduler .

All quantities in the BOM will be expressed for 1 unit in BaanSync Scheduler for example, if a formula is defined for 5 kg in BAAN, the materials will be defined for manufacturing 5kg of that item. Then this formula is sent to BaanSync Scheduler, all the quantities in the formula will be divided by 5, so that the formula is represented for 1 kg in BaanSync Scheduler.

This procedure is applicable for Standard, Customized, and Process BOMs.

If the Unit of measure for an item in the BOM is different than the Inventory unit of measure, the BOM unit will be converted to the Inventory unit of measure, and the quantity will also be converted accordingly.

Process previous transactions Yes/No

As explained in chapter 2, all day-to-day transactions entered in the BAAN system are recorded in an intermediate location. After the interface has been implemented and the common data has been transferred to BaanSync Scheduler, the user only needs to run the export data session with the common data option as No.

The export data session transfers only those records for which a transaction has taken place in the system. This transfer is performed through the intermediate file, in which all day to day transactions are recorded. A typical export will pick up all unprocessed transactions from the intermediate file and transfer them to BaanSync Scheduler. This will reduce the time for processing the data.

After the transfer the records in this file are marked as processed. If the user needs to process these transactions again, the option Process previous transactions should be Yes.

The user will then have to specify the date from which the transactions are to be reprocessed. The export data session will pick up all transactions from the date specified to the current date and export the data to BaanSync Scheduler.

The following data will also be transferred to BaanSync Scheduler.

Planned purchase receipt

A planned purchase receipt is created when a planned purchase order is transferred to Purchase or a Manual Purchase order is created. All planned purchase receipts will be transferred to BaanSync Scheduler. All existing purchase orders will be deleted from BaanSync Scheduler before the planned receipts are inserted.

BaanSync Scheduler will not reschedule these Purchase orders but will generate recommendations for rescheduling that the user has to manually process.

Stock levels

Whenever a stock transaction takes place for an item, the stock level will be transferred to BaanSync Scheduler. The Quantity on Hand will be updated for each transaction in BaanSync Scheduler. Thus, BaanSync Scheduler will know the exact quantity in stock after each transaction and will generate a transaction for each such stock updation.

SFC Production Orders

All production orders from the SFC module, whether created manually, generated from SIC, or transferred from MRP/MPS/PRP, will be transferred for the given time fence to BaanSync Scheduler.

PMG Production Batches

All production batches from the PMG module, whether created manually or transferred from MRP/MPS, will be transferred for a given time to BaanSync Scheduler.

There will be a different PMG order sent to BaanSync Scheduler for the main item, end items and the co-products. These orders will be identified by a running serial number appended to the main order.

For example, An item XYZ is packaged into end item containers XYZ-2lt and XYZ-5lt. During the process of producing the item XYZ, there is a co-product M coming out. If in Baan there is a production batch 705590 created for this item XYZ, then there would be 4 orders sent to BaanSync Scheduler:

PMG/MAN/705590/1	for the main item XYZ
PMG/MAN/705590/2	for the end items XYZ-2lt
PMG/MAN/705590/3	and XYZ-5lt
PMG/MAN/705590/4	for the co-product M

Production Feedback

The production feedback is sent to BaanSync Scheduler when the user reports that an operation or a production order is complete. The production feedback is sent on the basis of the work order data received from BaanSync Scheduler after scheduling, but this production feedback can be exported only once to BaanSync Scheduler. This restriction exists because the user can report partial operations complete, and the system has to constantly keep track of the quantity completed.

The production orders sent to BaanSync Scheduler can be identified as follows.

	Production Orders	Purchase Orders
MPS Module	MPS/PRD/999999	
MRP Module	MRP/PRD/999999	
PRP Module	PRP/PRD/999999	
SFC Module	SFC/MAN/999999	
PMG Module	PMG/MAN/999999/999	
Planned Prod. Batches	MPS/PMG/999999 MRP/PMG/999999	
Planned purchase receipts		INV/RCT/999999
Planned purchase receipts by customized item		PCS/RCT/999999

Thus, the export data session will create the ASCII files to be inserted into BaanSync Scheduler.

Insert Data into BaanSync Scheduler (tibcl1291m000)

Session objective

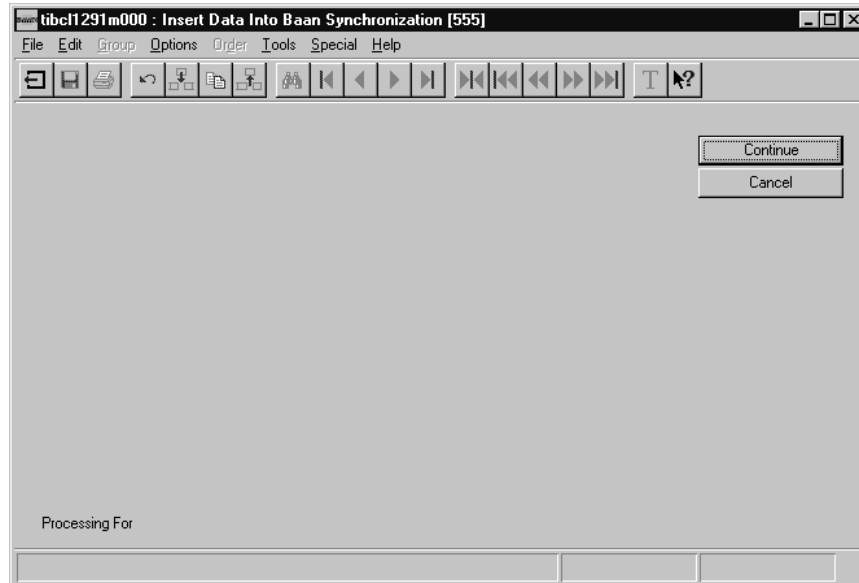
To insert data from ASCII files into BaanSync Scheduler.

How to use the session

This session will export the data from BAAN using ASCII files.

All the data files created by the session Export data will be inserted into BaanSync Scheduler.

At the end of the process, the system will prompt the user if any error files were created during insertion of data. The user should view the error files, take necessary action to correct the data, and reexport the data.



Schedule Orders in BaanSync Scheduler (tibcl0294m000)

Session objective

To schedule the production orders/batches in BaanSync Scheduler.

How to use the session

This session will schedule the production orders exported to BaanSync Scheduler.

For details of scheduling, refer to the session's field Help.

tibcl0294m000 : Schedule Orders in Baan Synchronization [555]

File Edit Group Options Order Tools Special Help

Schedule Date 19980319 Time 00:00:00

Continue

Global Delivery Yes

Leveling Yes

Complete Yes

Generate Purchase Recommendations Yes

Date YMD

The user can also generate the purchase recommendations after the schedule.

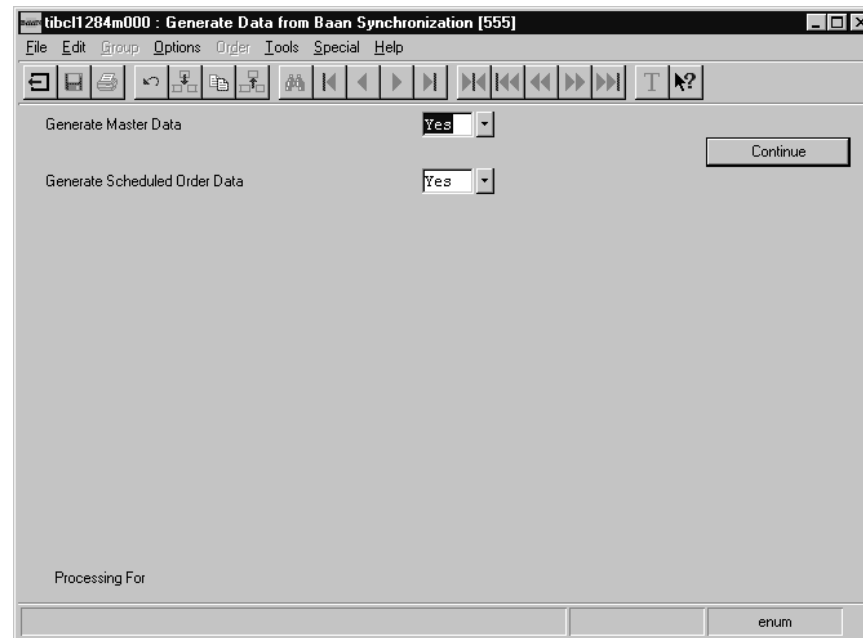
Generate data from BaanSync Scheduler (tibcl1284m000)

Session objective

To generate the scheduled order data from BaanSync Scheduler.

How to use the session

This session enables the user to generate the BaanSync Scheduler Master data and the Scheduled order data from BaanSync Scheduler. The user has the option to transfer the Master data, the Scheduled order data, or both.



The Master data consists of the following:

- Setups by Class
- Tools
- Resource Models
- Relations resource and resource models
- Qualified teams
- Resources by Qualified teams

The scheduled order data consists of the following:

- Scheduled Production orders/batches
- Scheduled work teams(Employees, Tools)
- Purchase Recommendations

This data is created in ASCII files specified in the Maintain Path for dumps (tibcl0190m000) and Maintain Exchange Schemes (tuxch0101m000) sessions.

The existing ASCII files are overwritten by the new ASCII files every time the data is generated.

Import data from BaanSync Scheduler (tibcl0285m000)

Session objective

To insert data from ASCII files into BAAN.

How to use the session

This session enables the user to insert data into BAAN that was generated in BaanSync Scheduler.



If the user selects the Master data option, the following data will be imported into BAAN. This data can only be viewed by the user in BAAN.

- Tools
- Tool Models
- Employee Models
- Machine Models
- Relation Tool/Model
- Relation Employee/Model
- Relation Machine/Model
- Setup states by Class
- Qualified teams
- Tools by Qualified team
- Employees by Qualified team
- Machines by Qualified team

If the user selects the Scheduled order data option, the following data will be imported into BAAN.

- Planned MPS/MRP/PRP production orders
- SFC production orders
- Planned MPS/MRP production batches
- PMG production batches
- Purchase recommendations

Planned MPS/MRP/PRP production orders

The planned MPS/MRP/PRP production orders are imported from BaanSync Scheduler and updated in the respective BAAN tables. If the MRP orders were generated, the Planned start and end dates are updated. If the MRP orders were manually entered, the Fixed start and end dates are updated.

SFC Production orders

The SFC production order will be updated with the start date of the earliest operation and the end date of the latest operation in the order. The original production start date and end date will be moved to the Original production start and end date and time fields. Each operation in the production planning will be updated with the appropriate start and end dates received from BaanSync Scheduler.

Planned MPS/MRP production batches

The planned MPS/MRP production batches are imported from BaanSync Scheduler and updated in the respective BAAN tables. If MRP/MPS batches were generated, the Planned start and end dates are updated. If the MRP/MPS batches were manually entered, the Fixed start and end dates are updated.

PMG Production batches

The PMG production batch will be updated using the start date of the earliest operation among all the split orders and the end date of the latest operation among all the split orders. The original production start date and end date will be moved to the Original production start and end date and time fields. Each operation in the production planning will be updated with the appropriate start and end dates received from BaanSync Scheduler.

Purchase recommendations

The purchase recommendations are generated in BaanSync Scheduler for the scheduled production orders. These purchase recommendations are transferred to BAAN and updated in the Planned MPS/MRP/PRP purchase order tables. Before the purchase recommendations are updated in the BAAN tables, the existing planned purchase orders are deleted.

Detailed Planning Machines/Employees/Tools

This data consists of the MO Step number created in BaanSync Scheduler for each Manufacturing order. The work teams and the Machines/Employees/Tools assigned to each MO Step is updated in these tables. The MO Step number is used to send the Production feedback to BaanSync Scheduler when the user reports that an operation or an order is complete.

The error files created in this session will be stored in the log files specified in the Maintain Exchange Schemes (tuxch0101m000) session.

Routings

Maintain Tasks (tirou0103m000)

Session objective

To Maintain Tasks(BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the tasks data required by BaanSync Scheduler.

The screenshot shows the 'Maintain Tasks' window. The task is '401 new welding'. The fields are as follows:

Field	Value
Operation Type	Standard
Save Setup Time	Yes
Delayed by	No Delay
Fixed Duration	0 Day
Standard Rate Qty	0
Standard Rate Duration	0 Day
Cycle Type Rate	No
Lot Size	1
Minimum Lot Size	1
Transfer Lot Qty	0
Transfer Delay	0 Day

For a detailed description of each field refer to each field's individual Help.

The Production rate defined in Form 1 is copied to the field Standard Rate Qty in Form 2 (BaanSync Scheduler Data), and the Standard Rate Duration (BaanSync Scheduler Data) is set to 1 Hr.

The Standard rate quantity and duration will be accepted if the operation type is standard or synchronised batching. The Fixed duration will be accepted if the operation type is Fixed.

The user should attach a Qualified team to a task. The Qualified teams will automatically be copied if a routing is created using the Task.

Maintain Routing (tirou2110m000)

Session objective

To Maintain Routing (BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the data required by BaanSync Scheduler for the Routing.

For a detailed description of each field refer to the field help.

Operation	Task	Operation Type	Save Setup Time	Delayed by	Fixed Duration Time	Time Unit	Std. Rate Qty.	Std. Rate	Time Unit		
10	/	1	5002	Standard	Yes	No Delay	0	Day	10	1	Day
20	/	1	6001	Standard	Yes	No Delay	0	Day	0	0	Day
30	/	1	2003	Standard	Yes	No Delay	0	Day	0	0	Day
40	/	1	99	Standard	Yes	No Delay	0	Day	0	0	Day

The Standard rate quantity and duration will be accepted if the operation type is standard or synchronised batching. The Fixed duration will be accepted if the operation type is Fixed.

The BaanSync Scheduler Data displayed above will be copied by default from the Task.

The Qualified teams will be copied automatically from the Task, if defined.

The user must maintain the Qualified teams per operation.

The Setups will have to be attached to each Operation in the Routing, although this process is not mandatory.

The user must maintain the Operation Relationships.

A record must exist for each manufactured item in the Maintain Routing codes by Item (tirou1102m000) session.

Operation	Task	Lot Size	Min. Lot	Trans. Lot	Transfer Delay	Time Unit	Reject Multi	Constant Reject	Cycle Type		
10	/	1	5002	1	1	0	0	Day	1.00	0.00	No
20	/	1	6001	1	1	0	0	Day	1.00	0.00	No
30	/	1	2003	1	1	0	0	Day	1.00	0.00	No
40	/	1	99	1	1	0	0	Day	1.00	0.00	No

Maintain Customized Routing (tipcs2170m000)

Session objective

To Maintain Customized Routing (BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the data required by BaanSync Scheduler for the Customized Routing.

Opr	Task	Operation	Save	Delayed	Fixed	Time	Std. Rate	Std. Rate	Time
		Type	Setup	by	Duration	Unit	Qty.	Rate	Unit

For a detailed description of each field refer to the field help.

The Standard rate quantity and duration will be accepted if the operation type is standard or synchronised batching. The Fixed duration will be accepted if the operation type is Fixed.

The BaanSync Scheduler Data displayed above will be copied by default from the Task.

The Qualified teams will be copied automatically from the Task, if defined.

NOTE: The user must maintain the Qualified teams per operation.

The Setups will have to be attached to each Operation in the Routing. Not Mandatory.

NOTE: The user must maintain the Operation Relationships.

tips2170m000 : Maintain Customized Routing [555]

File Edit Group Options Order Tools Special Help

Form 1 Form 2 Baan Sync. Data Baan Sync. Data Baan Sync. Data

Project 4 J. Kisch & Zn. B.V. Active
Manuf. Item ***** 0

Opr	Task	Lot	Min.	Trans.	Transfer	Time	Reject	Constant	Cycle
		Size	Lot	Lot	Delay	Unit	Multi	Reject	Type
		Size	Qty.						Rate

Man Occupation Extra Information
Mach. Occupation Subc. Rate Factor
Opr. Overlap [%] Backflushing
Count Point

zoom



Maintain Routing Operations (psrou2110m000)

Session objective

To Maintain Process Routing (BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the data required by BaanSync Scheduler for the Process Routing.

For a detailed description of each field refer to the field help.

The screenshot shows the 'BaanSync Scheduler Data' window for 'Cola'. It displays a table of routing operations with columns for Op, Task, Standard, Yes, No Delay, Hr., and various numerical values. The table is filtered to show operations 22 through 29. Below the table, there are fields for 'Effective Date' and 'Expiry Date'.

Op	Task	Standard	Yes	No Delay	Hr.								
22	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	
21	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	
23	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	
24	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	
25	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	
29	Standard	Yes	No Delay	0	Hr.	1	1	Hr.	1	1	0	0	

The Standard rate quantity and duration will be accepted if the operation type is standard or synchronised batching. The Fixed duration will be accepted if the operation type is Fixed.

The BaanSync Scheduler Data displayed above will be copied by default from the Task.

The Qualified teams will be copied automatically from the Task, if defined.

The user must maintain the Qualified teams per operation.

The Setups will have to be attached to each Operation in the Routing. Not Mandatory.

The user must maintain the Operation Relationships.

To Maintain Production Orders (BaanSync Scheduler Data).

This session enables the user to maintain the data required by BaanSync Scheduler for the Production orders.

For a detailed description of each field refer to the field help.

The screenshot shows a software window titled "tisfc0101m000 : Maintain Production Orders [555]". It has a menu bar (File, Edit, Group, Options, Order, Tools, Special, Help) and a toolbar with various icons. Below the toolbar is a table with columns: Order, Proj, Item, W/rh, Quantity, and De. The table contains five rows of data. Below the table is a tabbed interface with tabs for Form 1, Form 2, Form 3, and "Baan Sync. Data". The "Baan Sync. Data" tab is active, showing a form with fields for Production Order (2), Lot Splitting (0), Priority (No), Due Date, Due Time (00:00), Transfer Status, Baan Sync. Order, Status, Status Date, and a Planning section with Scheduled Start Date, Scheduled End Date, Original Planning, Start Date/Time, and Planned End Date.

Order	Proj	Item	W/rh	Quantity	De
2		05106 Back-element b1	001	10.0000	pc 94-(
3		06101 Seat-element re	001	10.0000	pc 94-(
4		06103 Seat-element b1	001	10.0000	pc 94-(
5		06106 Seat-element b1	001	10.0000	pc 94-(

Production Order	2	Baan Sync. Order	To Do
Lot Splitting	0	Status	
Priority	No	Status Date	/00:00:00
Due Date		Planning	
Due Time	00:00	Scheduled Start Date	94-06-09 / 00:00
Transfer Status		Scheduled End Date	94-06-10 / 00:00
		Original Planning	
		Start Date/Time	/00:00
		Planned End Date	/00:00

After the scheduled orders are imported from BaanSync Scheduler, the Plan dates generated by BAAN are updated in the fields Original Start Date and End Date. When the SFC orders are sent again for scheduling, the Original Plan dates will be sent to BaanSync Scheduler. The Planned Start date will be updated with the earliest Operation start date and the Planned End date will be updated with the latest Operation end date.

Maintain Production Planning (tisfc1101m000)

Session objective

To Maintain Production Planning (BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the data required by BaanSync Scheduler for the Production orders planning.

For a detailed description of each field refer to the field help.

gisfc1101m000 : Maintain Production Planning [555]

File Edit Group Options Order Tools Special Help

Form 1 Form 2 Form 3 Baan Sync. Data

Production Order 6 Completed 21.0000 pcs

Project

Item 05100 Back-element (Engineering)

Operation * 10

Task 4002 Foaming

Scheduled Start Date 94-05-27 16:04 Save Setup Time No

Scheduled End Date 94-05-27 17:45 Baan Sync. Order To Do

Operation Type Standard

Delayed by No Delay

Std. Rate Qty. / Time 0 0 Day

Transfer Lot Qty 0

Transfer Delay 0 Day

Fixed Duration Time 0 Day

Perish. Within Oper. 0 Day

Perish. Between Oper. 0 Day

Transfer Status

Lot Splitting 0

Reject Multiplier 0.00

Constant Reject 0.00

Lot Size 1

Minimum Lot Size 0

Cycle Type Rate No

<Ctrl><Shift>[G]: Maintain Qualified Teams by Production Planning

zoom

The Standard rate quantity and duration will be accepted if the operation type is standard or synchronised batching. The Fixed duration will be accepted if the operation type is Fixed.

The BaanSync Scheduler Data is copied by default from the Routing. This data can be modified by the user.

The Qualified Teams are copied from the Routing by default for each operation.

NOTE: The user must define a Qualified Team for an Operation.

The Setups are copied by default for each Operation.

NOTE: The user must maintain the Operation Relationships.

Production Batch/Planning

Maintain Production Batches (pspmg0101m000)

Session objective

To Maintain Production Batches (BaanSync Scheduler Data).

How to use the session

This session enables the user to maintain the data required by BaanSync Scheduler for the Production batches.

For a detailed description of each field refer to the field help.

The screenshot displays the 'pspmg0101m000 : Maintain Production Batches [555]' window. It features a menu bar (File, Edit, Group, Options, Order, Tools, Special, Help) and a toolbar with various icons. Below the toolbar is a table with the following data:

Batch	Item	Status	Qty Ordered	Un.	De
808006	90010 Butter	Completed	1000.00	kg	97
808007	90010 Butter	Released	1000.00	kg	97
808008	90010 Butter	Planned	1000.00	kg	97
808012	COLA Cola	Planned	100.00	l	98

Below the table, there are tabs for 'Form 1', 'Form 2', 'Form 3', and 'Baan Sync Data'. The 'Baan Sync Data' tab is active, showing a detailed form for editing a production batch. The form includes fields for 'Production Batch' (808006), 'Company' (550), and 'To Do' (0). There are also fields for 'Original Start Date' (97-01-15 / 00:00) and 'Original End Date' (97-03-26 / 00:00). A 'Zoom' button is located at the bottom right of the form.

After the scheduled orders are imported from BaanSync Scheduler, the Plan dates generated by BAAN are updated in the fields Original Start Date and End Date. When the SFC orders are sent again for scheduling, the Original Plan dates will be sent to BaanSync Scheduler.

1. The first group of variables includes the following:

pspmg2100m000 : Maintain Estimated Batch Planning [555]

File Edit Group Options Order Tools Special Help

Form 1 Form 2 Form 3 Baan Sync Data

Production Batch 300006 Completed Plan valid

Quantity Ordered [kg] 1000.00 Batch Del Date 97-03-26 / 1

Item 90010 Butter

Operation 10 Mixing

97-01-15 00:00 No

97-01-15 00:00 To Do

Standard 0

No Delay 0.00

/ 0 0 Day 0.00

0 1

0 Day 0

0 Day No

0 Day

0 Day

Added

zoom

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	52
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----

1. *Journal of Management Studies*, 1997, 34, 1, 1-14.
