

# **Function Description**

## **Alarm from Handset**

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## 1 Introduction

One of the functions in the System 9d (DECT) System is that Cordless Handsets equipped with alarm functions, have the possibility to send different types of alarm messages to the Integrated Message Server (IMS). The alarm message is then distributed to interface modules, for example an Alarm Module or Output Module for further actions.

An alarm message can consist of information such as; the alarm is manually initiated by the user or the user has not moved within a pre-set period of time. It is also possible to add the location of the Cordless Handset to an alarm. The location can either be manually added by the user or an location given by the closest Base Station or from the DECT Beacon Location Devices.

## 2 Technical Solution

The communication with the Cordless Handset is handled by the System 9d consisting of an Integrated Message Server (IMS), a DECT Radio Exchange, Base Stations and System 900 modules such as Alarm Module, Output Module etc.

When an alarm message is sent, it is distributed via the Base Station and IMS to the intended interface module that in turn has been programmed to take further actions. The Basic Alarm Manager in the IMS can be programmed to take care of alarms and then programming of the interface modules is not required.

Alarm messages can also, via an Alarm Management Server (AMS), be presented on a PC with the software AMC. The PC can besides the identity, alarm type and time also display the location graphically. This solution is not described in this document, for more information refer to *Installation and Operation Manual AMS - TD 92047GB*.

Another solution is to use the Open Access Server (OAS). The OAS is an application server (based on ELISE hardware) for TCP/IP connections. Together with the Open Access Toolkit (OAT), it enables creation of customized PC applications to communicate with the System 900. This solution is not described in this document, for more information refer to *Data Sheet OAS - Open Access Server - TD 92090GB* and *Data Sheet OAT - Open access Toolkit - TD 92029GB*.

### 3 Types of Alarm

For detailed description of the alarm types, see your Cordless Handset User Manual:

- *User Manual, 9d23 MkII Cordless Handset - TD 92089GB*
- *User Manual, 9d24 Cordless Telephone - TD 92136GB*

#### 3.1 Personal Alarm

The different types of personal alarm are:

- Push-button alarm  
Manually initiated by the user pushing the red button on the handset.
- No-movement alarm  
Automatically sent when the user has not moved within a pre-set period of time.
- Man-down alarm  
Automatically sent when the handset is tilted for a pre-set period of time.
- Pull-cord alarm  
Automatically sent when the pull-cord catch is removed, either immediately or after a delay of 10 seconds.
- Test alarm  
Manually initiated by the user for test purposes.

#### 3.2 Location Information

In addition to the personal alarm type, information about the location of the Cordless Handset can also be added. The location can either be manually added by the user (alarm with data), an approximately location given by the closest Base Station (Base Station location) or with a more precise location from the DECT location devices (DECT Beacon Location).

##### 3.2.1 Manually Added Location (Alarm with Data)

Additional data, for example a location code, can be sent along with an alarm. The data (for example a room number) is manually entered in the Cordless Handset by the user when entering the room. If an alarm is sent the data (room number) is added to the alarm as a location of where the alarm was activated. The location data must be manually removed after leaving the area.

##### 3.2.2 Base Station Location

An approximate location of the Cordless Handset is possible to add to an alarm sent from the handset. The handset evaluates the field strength ratio of the individual radio Base Stations and sends the best-rated Base Station as a location of where the alarm was activated. However, location based on radio field strength measurements must be regarded as an indication only.

##### 3.2.3 DECT Beacon Location

The DECT Beacon Location is equipped with 9dLD Location Devices, mounted inside the radio coverage from the Base Station. The 9dLD continuously transmits a location code to the Cordless Handset. When an alarm is sent, the two last stored location codes, together with the time since they were received, are transmitted to give an indication of the location of the Cordless Handset.

## 4 System Outline

### 4.1 Alarm without Location (Example 1 and 2)

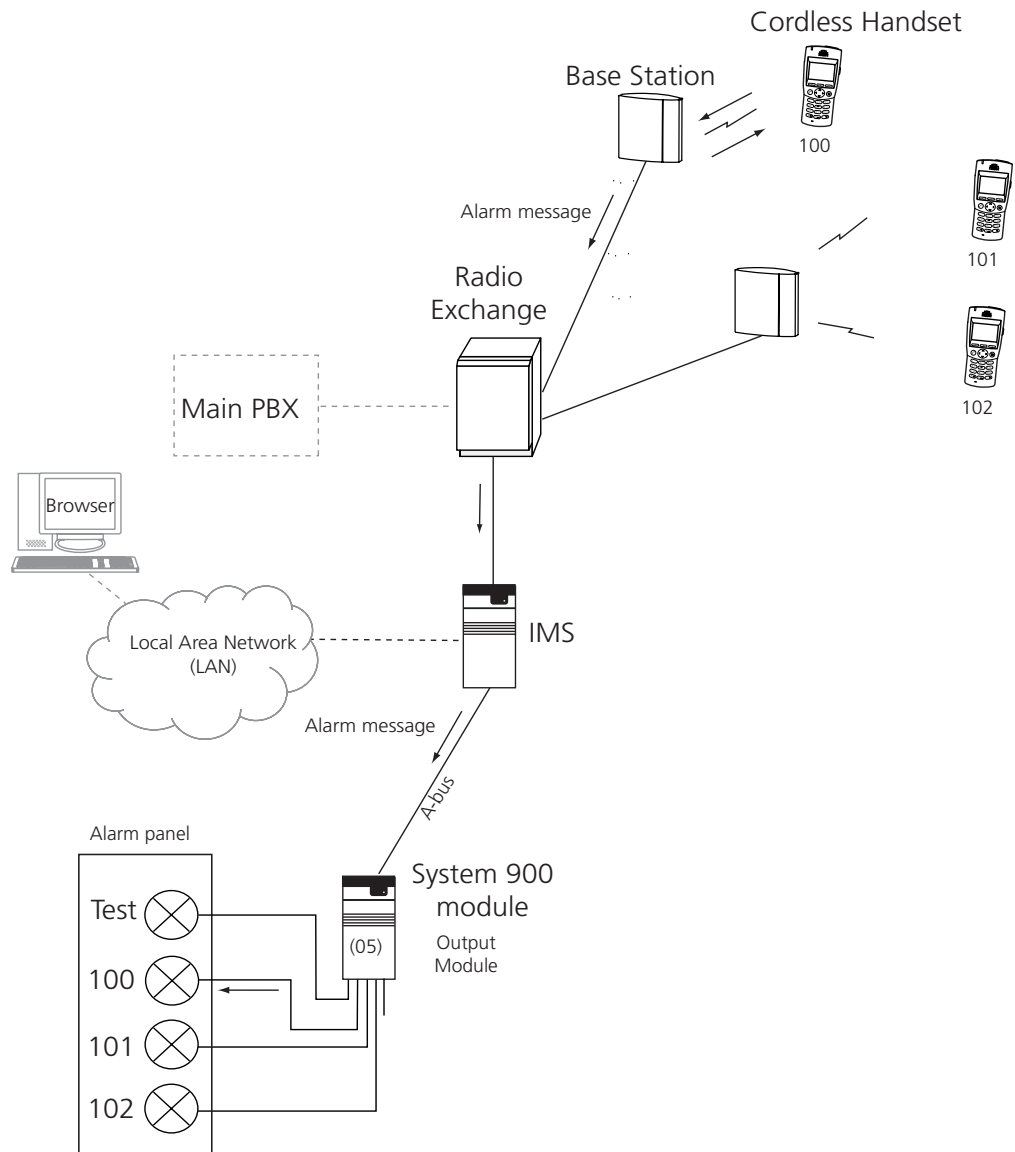


Figure 1. Alarm from Cordless Handsets are indicated by signal lamps on a panel.

#### Example 1

Alarm from the Cordless Handsets are indicated by signal lamps connected to outputs on the Output Module. One of the signal lamps are used for testing the Cordless Handsets and the other are used for alarm from the Cordless Handsets, one signal lamp for each handset. (This solution gives no indication of what type of alarm that is sent, but if this is needed more outputs and lamps can be added).

If the users of the handsets have a limited working area and the signal lamps are placed where they can be seen, for example by a guard, this could be a simple solution for a small working site. If the user of Cordless Handset 100 sends an alarm this is indicated by the signal lamp with the text "100". When the alarm has been taken care of, the guard resets the alarm by sending user data.

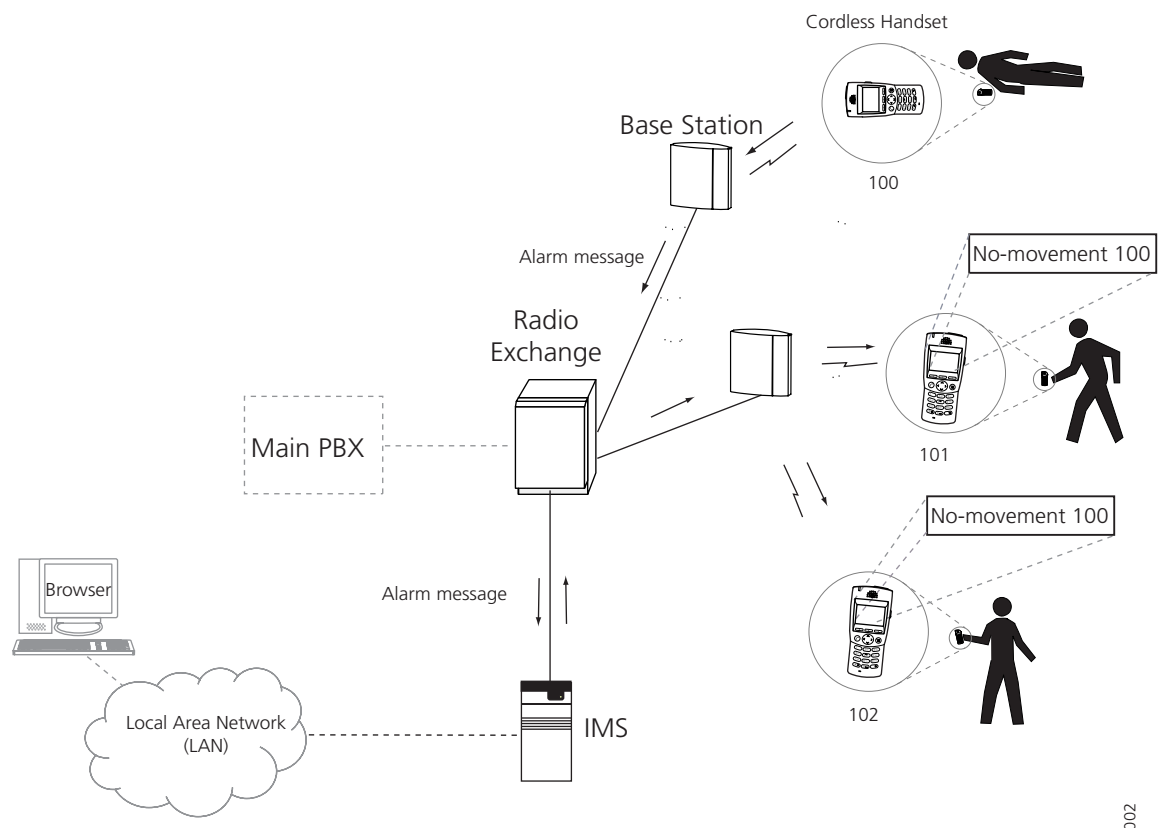


Figure 2. Alarm from Cordless Handset activates the alarm manager in the IMS to send messages to other handsets.

### Example 2

When an alarm is activated from one handset a message consisting of type of alarm and the handset ID, is sent to the other handsets.

In this example the user of handset 100 has fallen and remains lying. When he has not moved for the pre-set period of time, the handset automatically sends a no-movement alarm. The users of handsets 101 and 102 receives a message with the text "No-movement 100" and can take appropriate action to help.

## 4.2 Alarm with Location (Example 3 and 4)

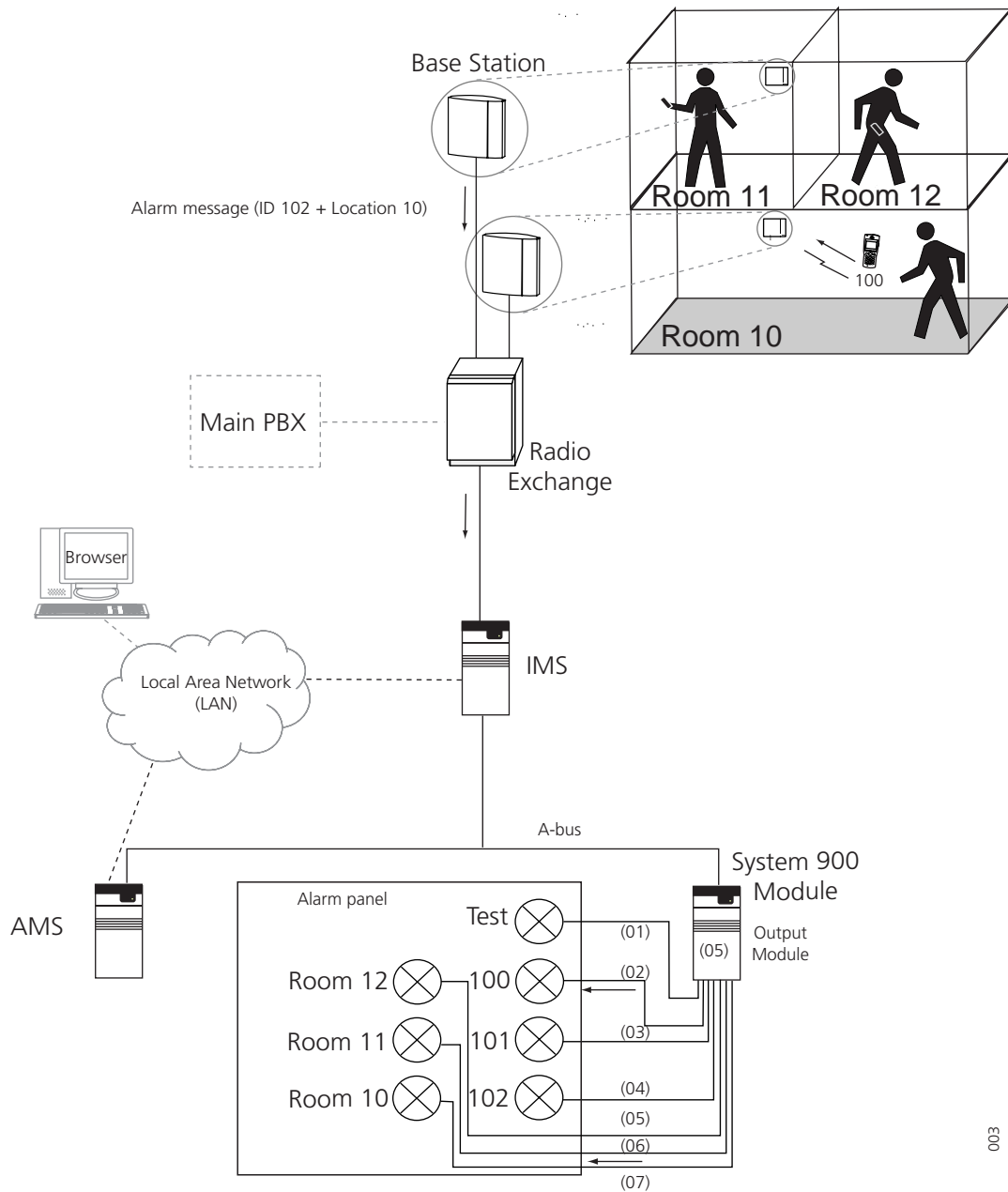
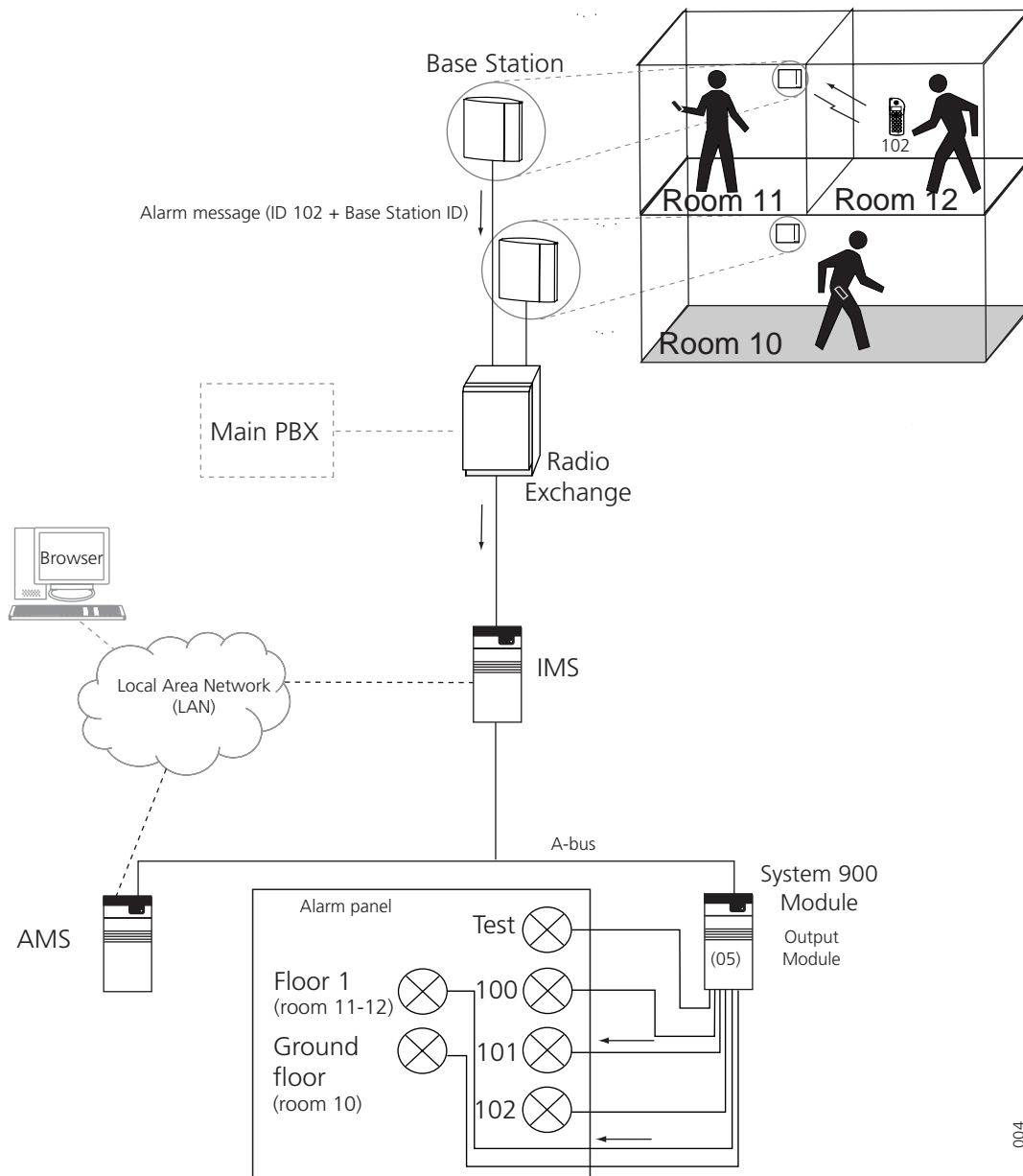


Figure 3. The Cordless Handset identity as well as the location are indicated by signal lamps on an alarm panel.

### Example 3 (manually added Location)

The same solution as in [Example 1](#) on page 3, but in addition the manually added location data (room number) is sent together with an alarm. The location is indicated by signal lamps connected to outputs on the Output module. The alarm panel is placed where it can be seen, for example by a guard.

The user of handset 100 manually enters the data "10" to the handset when entering room 10. If an alarm is sent, this is indicated by two signal lamps. One with the text "100" to indicate the handset ID and another with the text "Room 10" to indicate the location. The guard now knows not only the identity of the handset but also from where the alarm was sent. When the alarm has been taken care of, the guard resets the alarm by sending user data.



004

#### Example 4 (Base Station Location)

The same solution as in [Example 1](#) on page 3, but in addition the ID of the strongest Base Station is sent together with an alarm. The location is indicated by signal lamps connected to outputs on the Output module. The alarm panel is placed where it can be seen, for example by a guard.

In this example, each Base Station covers a floor. Two signal lamps indicates an alarm, one to indicate the handset ID and another to indicate the location. If the user of handset.102 sends an alarm, this is indicated by one signal lamp with the text "102" and another with the text "Floor 1". The guard now knows not only the identity of the handset but also from which floor the alarm was sent (but not in which room since the Base station covers both room 11 and 12).

When the alarm has been taken care of, the guard resets the alarm by sending user data.



## 5 System Requirements

### **Cordless Handsets**

- 9d23 EX-Protector Mk II
  - Software version 2.0 or later
- 9d23 Protector MkII
  - Software version 1.05 or later
- 9d24 Protector
  - Software version 1.42 or later

### **Integrated Message Server (IMS)**

- IMS version 2.10 or later

### **Alarm Management Server (AMS)**

- AMS version 3.00 or later

### **Alarm Management Client (AMC)**

- AMC version 3.01 or later

### **Output Module**

- T941OM
  - Software version 2.0 or later

### **Alarm Module**

- T941AM8 or T941AM32
  - Software version 4.00 or later

## 5.1 Software Requirements for Base Station location

- 9d23 EX-Protector Mk II
  - Software version 2.0 or later
- 9d23 MkII Protector
  - Software version 1.05 or later
- 9d24 Protector
  - Software version 2.01 or later
- Base Station, version R1G
- AMS version 3.20 or later

### If PC with OAS/OAT is used:

- OAS (Open Access Server)
  - Software version 2.0 or later
- OAC (Open Access Components)
  - Software version 2.0 or later
- PC requirements: refer to *Data Sheet OAT - TD 92029GB*.

### If PC with AMC is used:

- AMC version 3.01 or later
- PC requirements: refer to *Data Sheet AMC - TD 92144GB*

## 5.2 Software Requirements for DECT Beacon Location

- 9d24 Protector
  - Software version 2.01 or later
- AMS version 3.20 or later

### If PC with OAS/OAT is used:

- OAS (Open Access Server)
  - Software version 2.0 or later
- OAC (Open Access Components)
  - Software version 2.0 or later
- PC requirements: refer to *Data Sheet OAT - TD 92029GB*.

### If PC with AMC is used:

- AMC version 3.01 or later
- PC requirements: refer to *Data Sheet AMC - TD 92144GB*

## 6 System Installation

### 6.1 Physical Installation

The installation of the Integrated Message Server (IMS) is described in *Installation and Operation Manual IMS - TD 92161GB*, the DECT Radio Exchange and the Base Stations are described in *Technical Product Manual DCT1800-GAP*, and the installation of System 900 in *System Installation, Personal Security System - TD 90678GB*.

The IMS can control up to 15 interface modules via the A-bus. The installation of these fixed units are described in separate *Installation Guides*, see chapter [8 Related Documents](#) on page 24.

#### 6.1.1 Base Station location - Considerations

Before installing such a system at a customer site, it is important that you internally in your organisation test this feature to get your own opinion on the accuracy of the system.

When selling a system with Base Station Location, make sure that the customer has reasonable expectations on the accuracy.

When installing a system with Base Station Location, take into consideration that:

- Normally more base stations are required than in a normal system.
- Name the locations in such a way that the name itself do not give too high expectations on the accuracy.

For example: a base station placed in the basement but covering both the basement and the staircase should not only be named "basement" but "basement and staircase".

### 6.2 How to set Module Parameters

When programming the units in the System 9d, these parameters must be set to make Alarm from Handset possible.

**Note:** The programming examples given on following pages are referring to [Example 1](#) on page 3, [Example 2](#) on page 4, [Example 3 \(manually added Location\)](#) on page 5, and [Example 4 \(Base Station Location\)](#) on page 6.

6.2.1    Parameter Settings in Example 1

To set the parameters in the output module (05 in the example) the application Basic Alarm Manager in the IMS is used. The Basic Alarm Manager can be reached from the left menu in the IMS administration pages or from the direct link <http://xxx.xxx.xxx.xxx/bam> where xxx.xxx.xxx.xxx is the IMS IP address.

Define Outputs

- 1        Click on "Define outputs" and "Define new output" .
- 2        Enter name on the outputs, module address and the output numbers. In this example, test alarm has got output 1, handset 100 output 2 etc. Save the changes.

Define outputs

Output name	Module Address	Output	Initial state	Initiate on save	
Internal output 1	internal	1	High	<input type="checkbox"/>	
Internal output 2	internal	2	High	<input type="checkbox"/>	
test alarm	05	1	Low	<input checked="" type="checkbox"/>	Remove
handset 100	05	2	Low	<input checked="" type="checkbox"/>	Remove
handset 101	05	3	Low	<input checked="" type="checkbox"/>	Remove
handset 102	05	4	Low	<input checked="" type="checkbox"/>	Remove

Define new output

?

Save changes

Cancel

005

Create Events

- 1        Create events for each alarm. Click on "Events" and "Create new event", add the name of the event and make a short description of the event in the notes field. In the example, an event is created for the test alarm from handsets 100-102.

Delete Event

Event Name

test alarm

Notes

Activates output 1 when test alarm is sent from handset 100-102

006

- 2
- Add an "Alarm from Handset" trigger. In the example, test alarms from handset 100-102 are triggered.

Alarm from Handset ?

Handset No.	Type	
100	Push-button long press	Remove
101	Push-button long press	Remove
102	Push-button long press	Remove

Add

007

- 3
- Create actions for the alarm event. In this example, output for "test alarm" is set to high for 10 seconds.

Activate Output ?

Output	Activation	Duration (s)	
test alarm	High	10	Remove

Add

008

- 4
- Save the event for test alarm.
- 5
- Create an event for the alarm from handsets 100. When any type of alarm, except test alarm, comes from handset 100 the output "handset 100" is set to high.

Alarm from Handset ?

Handset No.	Type	
100	Push-button double press	Remove
100	No-movement / Man-down	Remove
100	Pull-cord	Remove

Add

Actions

Send Message ?

Add

Activate Output ?

Output	Activation	Duration (s)	
handset 100	High		Remove

Add

009

- 6Save the event.
- 7Repeat 5-6 for handsets 101-102.

Reset Output Module

Create an event that resets the Output Module.

- 1Click on "Event" and "Create new event".
- 2Add an "Alarm from Data" trigger. Leave the field "Handset No." empty to trigger data from all the handsets. Set Data to 00.

Data from Handset ?

Handset No.	Data	
	00	Remove

Add

013

- 3Create actions for the event. Set the outputs on the Output Module to low.

Activate Output ?

Output	Activation	Duration (s)	
handset 100	Low		Remove
handset 101	Low		Remove
handset 102	Low		Remove

Add

014

- 4Save the event.

6.2.2    Parameter Settings in Example 2

Create a New Event

In this example, the Basic Alarm Manager is configured to send a message to handsets 101-102 if a no-movement alarm is sent from handset 100.

- 1      Click on "Event" and "Create new event". Give the event an appropriate name.
- 2      Define an "Alarm from Handset" trigger. In this example, No-movement/Man-down alarm from handset 100 is triggered.

Alarm from Handset ?

Handset No.	Type	
100	No-movement / Man-down	Remove

Add

010

- 3      Define Actions, in this case a text message will be sent to handsets 101 and 102. The beep code is set to 3.

Actions

Send Message ?

Handset address	Message text	Beep code
101	No-movement 100	3 - normal
102	No-movement 100	3 - normal

Add

011

- 4      Save the event.
- 5      Repeat for the other handsets.

### 6.2.3 Parameter Settings in Example 3

In this example, an Alarm Management Server (AMS) must be used since the Basic Alarm Manager in the IMS can't handle location alarms.

It is presumed that the AMS Default database is installed.

#### Preparations in the IMS

In the IMS, configure the DECT interface to distribute alarm and mobile data to the AMS. For more information see *IMS Installation and Operation Manual - TD 92161GB*.

#### Triggering the Alarms

The trigger condition is incoming alarms from handsets 100-102 and the alarm type should be all except Test alarm. The alarm trigger in the default database is modified.

- 1 Click on Event Handler configuration > Event Triggers > Alarm > Match Conditions. Set "State" to Activated.
- 2 Go to "Enter Condition".  
The condition is that the alarm is sent from handset 100-102.
- 3 Select the element: [in]Alarm/Delivery/:Source address/User.  
Select Comparison Type: Integer Interval.  
Set the Expression to 100-102.  
Click "Add Condition".

#### Enter Condition

##### Element

[in]Alarm/Delivery/:Source address/User

[in]

~Alarm/

Cont...

Get data

Comparison type

Integer Interval

##### Expression

Enter the integer interval in which the selected Element shall have its value.  
Syntax example: 100-140

100-102

Add Condition

012

- 4 Enter the conditions for the alarm type.  
Select the element [in]Alarm/:Type.  
Select Comparison Type: Integer Interval.  
Set the Expression to 02-06 (all alarms except test alarms).  
Click on "Add Condition".



### Defining the Output Activity Block

Different lamps are going to be lit depending of handset number and location. One way to handle this is with help of translations.

- 1 Create two translations tables, "Handset to output" and "Location to output".  
Handset to output

Source text	Destination text
100	02
101	03
102	04

Location to output

Source	Destination
10	07
11	06
12	05

- 2 In this example it is only manual location that is of interest. Therefore, the manual location is selected.  
Select Event Handler Configuration > Event Triggers > Alarm > Assignments. Click on "Add Selection".
- 3 Select the element: [in]Alarm/Location Data/:Location{\*/Type.  
The \* means that all locations are selected.  
Set the Comparison type to Integer.  
Set Expression to 5 (manual location).

**Select a multiple Element**

[in]Alarm/Location Data/:Location{\*/Type

–Element Type–

No selection

Cont...

**Comparison type** Integer

**Expression**  
Enter the condition to match in the field below.

5

015

- 4 Click on "Submit".
- 5 Define which lamp that should be lit for each handset number. Use the translation table "Handset to output".  
Click on "Add Translation".

Select Source Element: [in]Alarm/Delivery/:Source address/User.  
Select Translation Table: Handset to Output.  
Select Destination Element: [out]Output Activity/:Activation{1}/Output

Add Translation

**Source Element**  
[in]Alarm/Delivery/:Source address/User  
[in] (Create Local) (Create Persistent)  
~Alarm/  
Cont...

**Translation Table**  
Handset to output (Create Table)

**Destination Element**  
[out]Output Activity/:Activation{1}/Output  
[out] (Create Local) (Create Persistent)  
~Output Activity/  
Cont...

016

- 6 Click on "Submit" .
- 7 Define the Activation type.  
Click on "Add Definition" .  
Set Definition string to 01.  
Select Destination Element: [out]Output Activity/:Activation{1}/Type.

**Destination Element**  
[out]Output Activity/:Activation{1}/Type  
[out] (Create Local) (Create Persistent)  
~Output Activity/  
Cont...

Submit Close

017

- 8 Click on "Submit" .

- 9 Define which lamp to lit to indicate the location. Use the translation table "Location to output".

Click on "Add Translations".

Select Source Element: [in]Alarm/Location Data/:Location{1}{selection}/Code. Tick the box "Use Select" in the Location Data block.

- 10 Select Translation Table: Location to output

Select Destination Element: [out]Output Activity/:Activation{2}/Output.

## Add Translation

- 11 Click on "Submit"

- 12 Define Activation type.

Click on "Add Definition".

Set the Definition string to 01.

Select Destination Element: [out]Output Activity/:Activation{2}/Type

- 13 Click on "Submit".

### Define the Output Module Address

Before the Output Module can be activated, the module address must be defined.

- 1 Click on "Add Definition".  
Set Definition string to 05 (the address of the Output Module in this example).  
Select Destination Element: [out]Output Activity/Delivery/:Destination address/  
Service address.

**Destination Element**

[out]Output Activity/Delivery/:Destination address/Service address

[out] (Create Local) (Create Persistent)

~Output Activity/

Cont...

Submit Close

020

- 2 Click on "Submit".

### Activate Outputs

- 1 Select Alarm > Activations.
- 2 Select Set Default Activation: External Action/Send Output Activity.

**Activations**

**Default Activation**

Existing: External Action: Send Output Activity Delete

**Set Default Activation**

External Action (Create...)

Send Output Activity

Submit

021

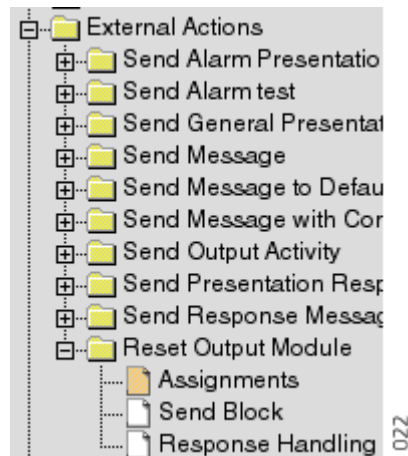
- 3 Click on "Submit".

### Reset Output Module

Create an action that resets the Output Module.

- 1 Select Event Handler Configuration > External Actions.
- 2 Enter the name "Reset Output Module" in the "Add new" field and click on "Add".

Select the action and click on "Assignments".



- 3 Set the module address as before, see [Define the Output Module Address](#).
- 4 Reset the outputs.  
Click on "Add Definition".  
Select the Destination Element: [out]Output Activity/:Reset.



- 5 Click on "Submit".

### Reset of Output Module at start up.

The AMS must be configured to reset the Output Module at start up.

- 1 Create an Event Trigger that detects when the AMS is restarted. Go to Event Triggers > Add new.
- 2 Select the new event and go to "Match Conditions".  
Select Element: [in]Start up.  
Select Comparison type: Exists.

Click on " Add Condition".

**Enter Condition**

**Element**

[in]Start up/

[in]

~Start up/

Cont...

Get data

**Comparison type** Exists

024

- 3 Go to "Activations" and select the External Action: Reset Output Module

**Select Activation**

External Action (Create...)

Reset Output Module

Submit

025

- 4 Click on "Submit".

### Manual Reset of the Output Module.

It should also be possible for a guard to reset the Output Module when an alarm has been taken care of. This is done by sending data 00 from a handset.

- 1 Create a new Event Trigger that detects user data 00 from any handset. Go to Event Triggers > Add new. Enter a name of the event.
- 2 Select the new event and go to "Match Conditions".  
Select Element: [in]User Data/:Data  
Select Comparison Type: Integer  
Set Expression to 00.
- 3 Click on " Add Conditions".
- 4 Go to "Activations" and select the External Action: Reset Output Module.
- 5 Click on "Submit".

### Activate

After the configuration is finished it is time to activate the event.

- 1 Click on "Activate configuration" in the top frame. The event is now active.

**Event Handler Configuration**

Activate configuration Save configuration Check configuration

026

#### 6.2.4 Parameter Settings in Example 4

The parameter setting in Example 4 is the same as in Example 3 except from the Data Location Type. In this example the location type is set to 3, Base Station Location. If the location system is DECT Beacon Location the location type is set to 4.

The Base Station location number can either be calculated, see [Appendix A](#), or accessed by measuring the Base Station Radio Strength Signal, see [Appendix C](#).

In the IMS there is also a Base Station Conversion tool available for converting the base stations IDs. This tool is preferable used in three situations:

- 1 To avoid having to update the base station ID in many places in the configuration of the alarm system, the IMS can convert the base station ID before it is sent to the alarm system. For example, if the MD restarts, all bases are getting new IDs. Instead of updating all AMS units in the system with the new IDs, the base station ID is only updated once in the IMS and then distributed to the alarm system.
- 2 When distributing the base stations IDs to the System 900, only the last 4 digits in the ID are used. The consequence of this can be that 2 (or more) base stations can get the same ID in the System 900 if they have the same last four digits in the original base station ID. This is prevented by converting the IDs in the IMS.
- 3 In the System 900 the Output Module can interpret the hexadecimal digit E as a wildcard. If the base station ID contains the digit E, convert the ID in the IMS to an ID, free of E.

For more information about Base Station Conversion, see *Installation and Operation Manual, Integrated Message Server (IMS) - TD 92161GB*.

## **7 Operating Instructions**

### **7.1 Activate Test Alarm**

Press and hold the red alarm button until "Test Alarm" is displayed.

### **7.2 Activate Push-button Alarm**

Press the red alarm button twice within two seconds to activate the alarm. "Personal Alarm" is displayed. The alarm is sent to the alarm central which distributes it. After that the Cordless Handset returns to standby mode. Note that you can always trigger the alarm when you are speaking, editing your settings or while the Handset is locked.

### **7.3 Activate No-movement Alarm**

The No-movement alarm will go off when you have not moved within a predefined time (default 30 seconds). Seven seconds before the alarm is activated a warning signal sounds and the "No-movement on" icon starts to blink. If you do not cancel the alarm it is sent and "No-movement" is shown in the display. The alarm is active during speech.

If a parameter is set in the SIM-card an Acoustic Localisation Signal (ALS) can follow a no-movement alarm that enables hearing the location of a distressed person. The time for the duration is set to 10 minutes but can be programmed. The ALS is silenced by pressing the mute button.

By setting the SIM parameter "Extra delay", the time before the warning for an alarm can be extended to ten minutes (default value 30 seconds) and no alarm will be triggered during the time period. When the warning signal sounds, press the Mute button to extend the time to next warning to ten minutes.

#### **Cancel No-movement Alarm**

Press any key to cancel the alarm.

#### **No-movement Alarm On/Off**

You can put the No-movement alarm in operation using the display menu or by programming the function as a Hot Key. For more detailed information see User Guides for the different Cordless Handsets.

### **7.4 Activate Man-down Alarm**

The Man-down alarm will go off when the handset is tilted more than 45° for a predefined time (default 30 seconds). Before the alarm is activated a warning signal sounds and the "Man-down alarm on" icon starts to flash. If you do not cancel the alarm by pressing a key, it is sent and "Man-down Alarm" is shown in the display. The alarm is active during speech.

The parameters ALS and Extra delay can be set for man-down alarm in the same way as for no-movement alarm.

#### **Cancel Man-down Alarm**

Press any key to cancel the alarm.



### **Man-down Alarm On/Off**

You can put the Man-down alarm in operation using the display menu or by programming the function as a Hot Key. For more detailed information see the User Guides for the different Cordless Handsets.

## **7.5 Activate Pull-cord Alarm**

If the handset is equipped with a pull-cord a Pull-cord alarm can be generated. The alarm is sent when the pull-cord catch is removed. The alarm can be triggered immediately or after a delay of ten seconds depending on the settings in the handset. If the "Delay Pull-cord alarm" is set the alarm will not be sent if the handset is placed in a charger within ten seconds. When the alarm is sent the Pull-cord alarm icon is flashing in the display.

### **Pull-cord Alarm On/Off**

You can put the Pull-cord alarm in operation using the display menu or by programming the function as a Hot Key. For more detailed information see the User Guides for the different Cordless Handsets.

## **7.6 Add Data (Location) to an Alarm**

Additional data for example a location code, can be sent along with an alarm. The data must manually be defined and stored by the user. To use the function, one "Hot Key" in the Cordless Handset must be defined as a short-cut to the menu "Edit alarm data". The stored data will be added to all types of alarm at transmission. The user must manually erase the location data after leaving the area. If not, the alarm will indicate a false location. For more detailed information, see the User Guides for the different Cordless Handsets.

## 8 Related Documents

User Manual, 9d23 MkII Cordless Handset	TD 92089GB
User Manual, 9d24 Cordless Telephone	TD 92136GB
System Description, Ascom 9d	TD 91931GB
System Description, On-site Paging System	TD 91034GB
Technical Product Manual DCT1800-GAP	
System Installation, Personal Security System	TD 90678GB
Installation and Operation Manual, Integrated Message Server	TD 92161GB
Installation Guide, Alarm Module T941AM8	TD 90858GB
Installation Guide, Alarm Module T941AM32	TD 90854GB
Installation Guide, Output Module T941OM	TD 90859GB
General Description, PCPAR	TD 90799GB
Installation and Operation Manual, AMS - Alarm Management Server	TD 92047GB
Data Sheet, AMC - Alarm Management Client	TD 92144GB
Installation and Operation Manual, AMC - Alarm Management Client	TD 92145GB
Data sheet, OAS - Open Access Server	TD 92090GB
Data Sheet OAT - Open Access Toolkit	TD 92029GB
Installation Guide, ELISE	TD 92020GB
Installation Guide, ELISE2	TD 92232GB

## Appendix A: Calculation of the Base Station Location Number in DCT1800

The 4-digit Base Station location number consists of the System ID and the Base Station ID.

### System ID

The two first digits in the Base Station Location number is taken from the two last digits in the B-ARI number. You find the B-ARI number in CSM > System Configuration.

B-ARI format = AEEEE NNNSS

1 Convert NNN to HEX. The least significant digit is the first digit in the Base Station location number.

2 Convert SS to HEX. This is the second digit in the Base Station location number.

*Example:* B-ARI = 100047 06215

062 (Dec.) = 3E (HEX) => **E** = first digit in the Base Station Location number.

15 (Dec.) = F (HEX) => **F** = second digit in the Base Station Location number.

### Base Station ID

The Base Station ID is calculated as follows:

**CLU\_ID \* 8 + (BASE\_NO - 1)**

**CLU\_ID** is given to a CLU (Cell Link Unit) the moment you add the first Base station to the CLU. Every CLU in the DECT system gets a CLU\_ID number, starting from 1 with increments of 1, i.e the CLU you first add a base station to always gets number (1) no matter the board-address. It will keep this number even if you later add more base stations to it.

**BASE\_NO** is the location of the Base Station on the CLU (1...8).

*Example 1:*

If you add a Base Station in position 3 on the CLU with board-address 40, the CLU gets CLU\_ID=1 and BASE\_NO=3.

=> Base Station ID =  $1 * 8 + (3 - 1) = 10$  (Dec.) => 0A (HEX)

*Example 2:*

If you add a Base Station in position 1 on the CLU with board-address 28 the CLU gets CLU\_ID=2 and BASE\_NO=1.

=> Base Station ID =  $2 * 8 + (1 - 1) = 16$  (Dec.) => 10 (HEX)

## Appendix B: Calculation of the Base Station Location Number in MD110

If the main PBX is an MD110 with integrated DECT, the Base station location number is found in the System Management Software (WinFIOL) for the MD110.

The 4-digit Base Station location number consists of the System ID and the Base Station ID. Each ELU31-board in the MD110 is considered as a system and has accordingly its own System ID.

### To calculate the Base Station location number

- 1 Ask the MD110 technician to make a list with Cordless Extension Common Fixed Part Data. The command is <CXCFP:FPI=ALL;
- 2 Look in the list for the PARI-number for each FPI (ELU31-board). The two last digits in this number is the System ID, i.e. the two first digits in the Base Station location number.
- 3 Ask the MD110 technician to make a list with Cordless Extension Radio Fixed Part Data. The command is <CXRFP:FPI=ALL,RPN=ALL;
- 4 Look in the list for the RPN-number (1...8) for each FPI (ELU31-board). Add (0) before this number. These two digits are the Base Station ID, i.e. the two last digits in the Base Station location number.

Example:

```
<CXCFP:FPI=ALL;
CORDLESS EXTENSION COMMON FIXED PART DATA
SARI = 10040343
```

FPI	BPOS	PARI	RFP	TRM	DELAY	SYNCH ROLE	SYNCH INFO	MODE
1	001-0-40	10040c8A	3	1	0	RING MASTER	01111	NORM
2	001-0-42	10040c89	2	1	0	BUS SLAVE	00011	NORM

END

```
<CXRFP:FPI=ALL,RPN=ALL;
CORDLESS EXTENSION RADIO FIXED PART DATA
```

FPI = 1 BPOS = 001-0-40

RPN	OPERATING STATE	BLOCKING STATE
1	OPERABLE	NOT BLOCKED
3	OPERABLE	NOT BLOCKED
4	OPERABLE	NOT BLOCKED

FPI = 2 BPOS = 001-0-42

RPN	OPERATING STATE	BLOCKING STATE
1	OPERABLE	NOT BLOCKED
3	OPERABLE	NOT BLOCKED

Base station  
location no.

8A01  
8A03  
8A04

8901  
8903

### CAUTION:

The PARI-value will change to a randomized value every time an ELU31-board is removed and initiated again, which means that the Base Station location number changes. Instruct the MD110 technicians to avoid changing Common Fixed- and Radio Fixed Part data in the MD110.

### If changes need to be done:

- 1 Ask the MD110 technician to make lists with Common Fixed- and Radio Fixed Part data **before** the changes. See instructions above.
- 2 Ask the MD110 technician to make new lists **after** the changes.

- 3 Compare the two last characters in the PARI-values in the old and new CXCFP:FPI=ALL; list.
- 4 If the value has changed it has to be changed in the software application (Output Module or PCPRO).
- 5 Check also the CXRFP:FPI=ALL,RPN=ALL; list to confirm that no Base Stations have been removed or added.
- 6 Finally check with a Cordless Handset that the alarms are triggered from the right location.

## Appendix C: Measuring the Base Station Location Number

You can get the Base Station Location number by measuring the Base Station Radio Signal Strength. You do this by using preprogrammed hot keys on the Cordless Handset.

### Programming the Hot Key, 9d23

- 1 Remove the battery pack.
- 2 Press and hold the C-button and place back the battery pack.
- 3 When a signal is heard, release the C-button. The signal indicates that you are in demo mode and can set the hot key functions. Confirm with the OK button.
- 4 Step with the arrow down button until "Menu 2" appears. Confirm with the OK button.
- 5 Step with the arrow down button until "2 Edit" appears. Confirm with the OK button.
- 6 Step with the arrow down button to select which button that is to work as a hot key. For example, when selecting "Hot key 1", button 1 on the keypad will work as a hot key. Confirm with the OK button.
- 7 Step with arrow button until "3 Function" appears. Confirm with the OK button.
- 8 Step with arrow button until "RSSI measure" appears. Confirm with the OK button.

### Programming the Hot Key, 9d24

- 1 Go to the Settings tab and mark "Hot key" and press navigation key (right).
- 2 Mark a key (0-9) and press navigation key right.
- 3 "Name" is marked. Press "Edit" and give the hot key a name, preferable RSSI. Press "Save".
- 4 Press navigation key down and "Function" is marked. Press "Change".
- 5 Use navigation key and choose function "Short-cut". Press "Select".
- 6 Use navigation key and choose "RSSI". Press "Select".
- 7 The hot key is now programmed for RSSI measurements.

### To Measure Radio Signal Strength (RSSI)

- 1 Make a call to another registered Cordless Handset. Make sure that the call is connected, i.e. that you can hear and talk with each other.
- 2 Press and hold the preprogrammed hot key, a number of characters will appear in the display.

*Character format: AA(s)BBCC -DD*

- 1 BB = System ID
- 2 CC = Base Station ID

*Example of characters:*

"OCs8802 -51"

**System ID = 88**

**Base Station ID = 02**

- 3 To finish the RSSI measurements, press and hold the hot key again.

## Appendix D: Special Considerations Planning the System

When planning a DECT System with Base Station Location it is important that the distributor of the system considers the following:

- Test this feature internally within your organisation to get your own opinion on the accuracy of the service.
- Make sure that the customer has reasonable expectations on the accuracy.
- Note that normally more base stations than in a normal system are required.
- Make sure that you name the locations in the system in such a way that the name itself does not give too high expectations on the accuracy.  
For example, a Base Station placed in a basement but covering both the basement and the staircase should be named "Basement and Staircase" and not only "Basement".
- Note that the ALS function (Acoustic Localisation Signal) in the Cordless Handset is a very good complement.