Orchestrating a brighter world NEC

InFIAS

Installation Guide

Issue 9

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Revision History

Who	Reason	When	Version
Stephen Werle	Initial Draft	15/8/17	0.1
Stephen Werle	Text corrections	16/8/17	0.1.1
Stephen Werle	Release version	15/9/17	3.0
Stephen Werle	Release version	30/4/18	4.0
Stephen Werle	Release version	6/12/18	5.0
Stephen Werle	Release version	7/8/19	7.0
Stephen Werle	Release version	31/01/20	9.0

Introduction

InFIAS is a middleware Application that is used in conjunction with an additional Front of House hospitality program which requires the translation of FIAS 2.21 compatible messaging in order to communicate with the SV9100 or SL2100 system.
It is also available as a maintenance release for the SV8100.
InFIAS is compatible with microsFidelio Opera, Hotsoft8 and with the installation of the InOnQ plugin, OnQ front of house systems.

Items and tooling required

Laptop/PC with Ethernet connection to the SV9100 or SL2100 CPU card
Web browser for customer interface–Firefox or Chrome
SV9100 or Sl2100 PCPro software
InFIAS pkg file

You should be familiar with SV9100 or SL2100 installation and PCPro software.

Glossary of Terms

FIAS

Fidelio Interface Application Specification is the messaging system designed my MicrosFidelio for connection to their front of house systems e.g. Opera.

PMS

Property Management System is a generic term for hotel management software. Typically the software will manage the status and availability of hotel rooms, and integrated systems such will provide integrated management and billing of telephone functions.

Licensing

SV9100 needs the following system licences:

Code	Description	Quantity
BE114071	Hotel licence	1
BE114072	PMS licence	1
BE118323	InFIAS licence	1

SL2100 needs the following system licences:

Code	Description	Quantity
BE116753	Hotel licence	1
BE116754	PMS licence	1
BE118324	InFIAS licence	1

SV8100 needs the following system licences:

Code	Description	Quantity
BE117575	Hotel/PMS licence	1
BE110211	PVA licence	1

Requirements

NEC SV9100 version 6.0X or higher software

NEC SL2100 needs 1.5 or higher software

NEC SV8100 needs 9.66 or higher software

HTTP Access

As the SV9100 CP20 does not currently have HTTP access enabled by default it is required to be enabled in PRG90-54-01.

Licensing the application

InFIAS periodically checks the licence is available on the PBX. A check is also carried out whenever the application is started, or on a power cycle of the PBX.

60 Day Trial

It is possible to run InFIAS for evaluation purposes using the 60 day trial period.

Once the 60 day trial expires or is disabled then InFIAS will be disabled.

PBX Configuration

Define hotel rooms

The PBX should be configured for hotel operation before the installation of InFIAS.

In PCPro go to *Advanced Items> Hotel> Hotel Room Extension Setup*

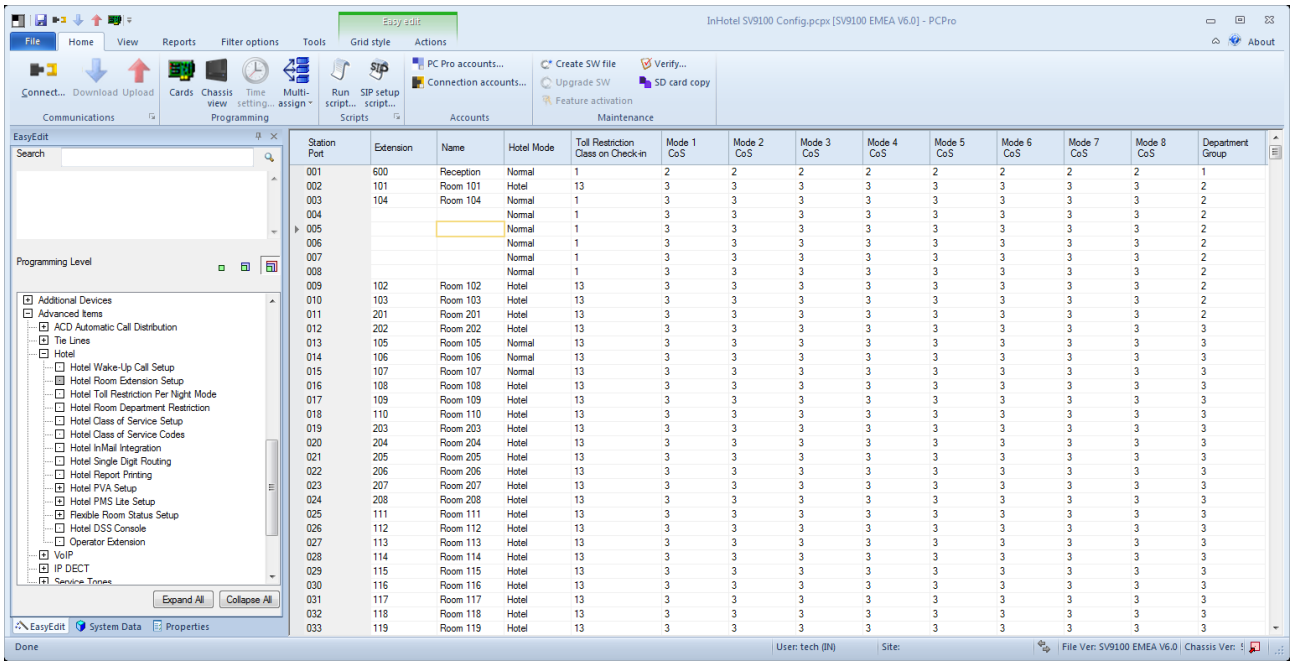


Figure 1 Advanced Items + Hotel + Hotel Room Extension Setup

In this screen define the hotel room telephones, set the type as 'Hotel'. It is also necessary to define a Class of Service and a 'Checked In' Toll Restriction Class. It is recommended to use the values below;

Toll Restriction Class on Check-in – 13/12/11 (ref Toll Class table under Configure Class of Service and Toll Restriction Classes)

Class of Service for Operator – 2

Class of Service for Hotel Rooms – 3

These classes will be defined over the next few programming chapters.

Configure Toll Restriction Classes

It is recommended that the following toll restriction classes are used.

Toll Class	Description	00 - International	0 - National	0XXXX – Local	999/112 - Emergency
10	Block all	✗	✗	✗	✓
11	Allow international	✓	✗	✗	✓
12	Allow national only	✓	✓	✗	✓
13	All local only	✓	✓	✓	✓

Configure your hotel rooms to use Toll Restriction Class 10 when they are checked out. This means that a room telephone cannot be used to make an external phone call unless the guest is checked in.

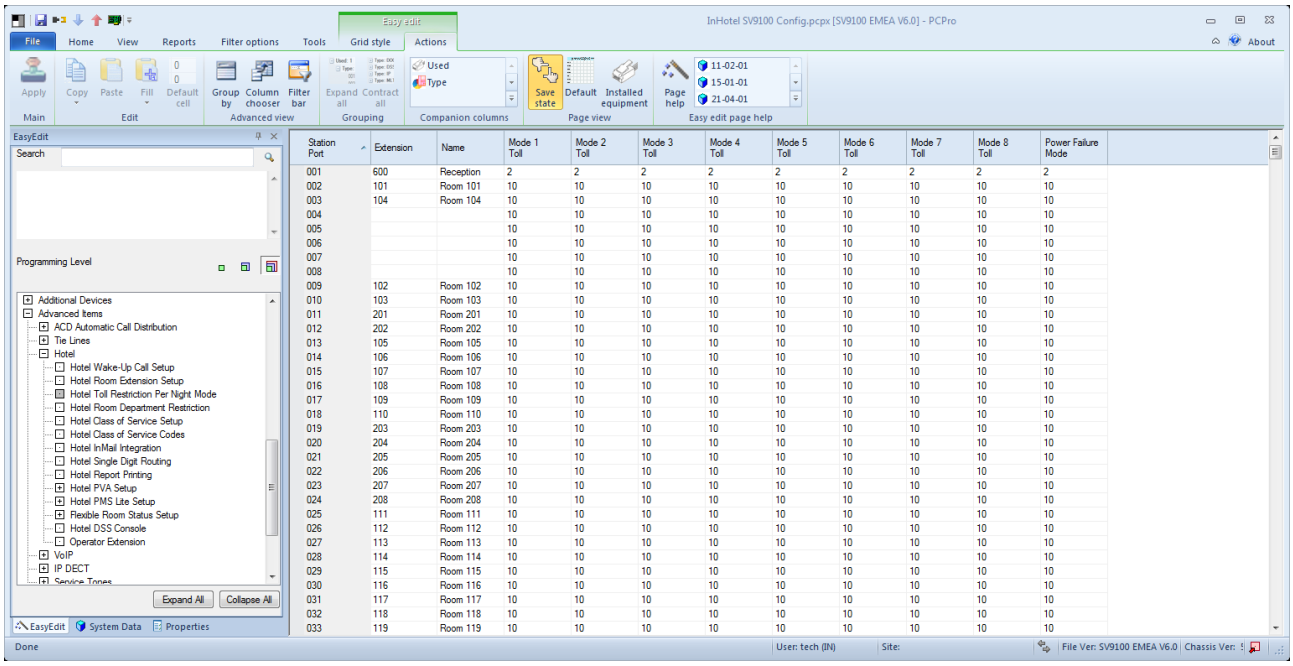


Figure 2 Advanced Items + Hotel + Hotel Toll Restriction Per Night Mode

To configure your toll restriction classes, use the Toll Restriction Assignment view.

Tip: Select 'Show all classes' to see classes 10-13.

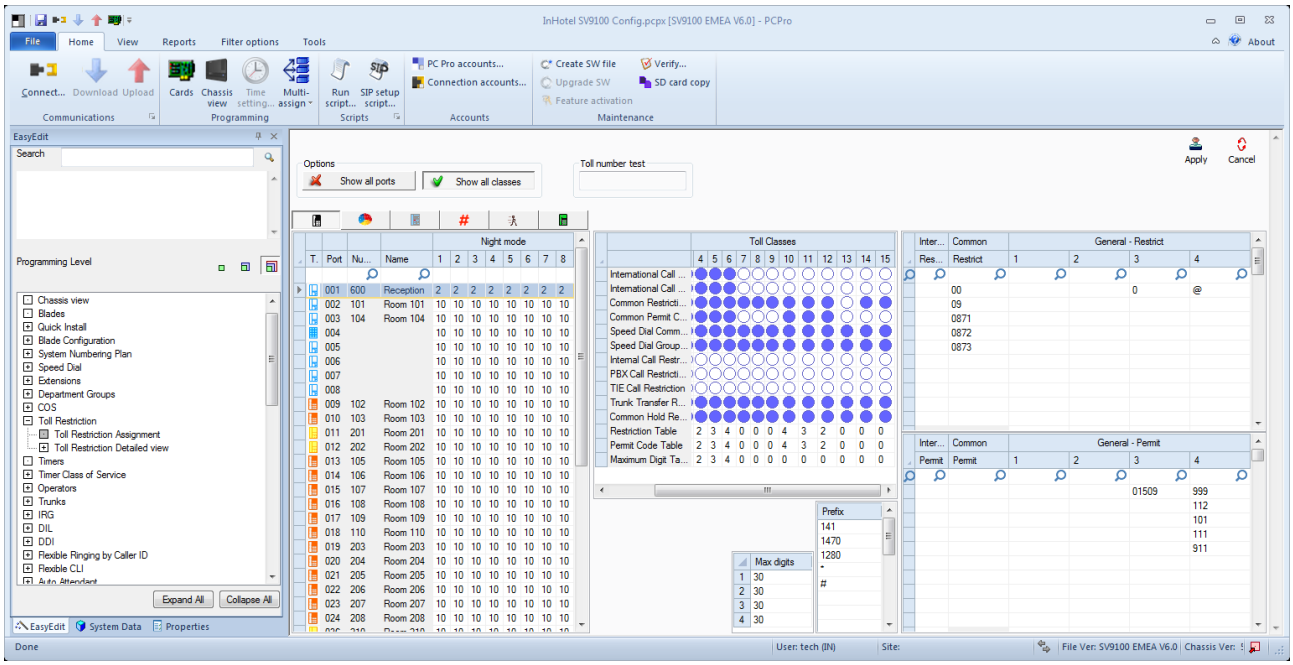


Figure 3 Toll Restriction + Toll Restriction Assignment

Toll Class	Description	00 - International	0 - National	0XXXX – Local	999/112 - Emergency
10	Block all	✗	✗	✗	✓
11	Allow international	✓	✗	✗	✓
12	Allow national only	✓	✓	✗	✓
13	All local only	✓	✓	✓	✓

See below a recommended configuration for the Toll Restriction Tables.

Description	Class 10 Block All	Class 11 Local Only	Class 12 National Only	Class 13 International Allowed
International Call Restriction Table				
International Call Permit Code Table				
Common Restriction Table	✔	✔	✔	
Common Permit Code Table	✔	✔	✔	
Speed Dial Common Restriction	✔	✔	✔	✔
Speed Dial Group Restriction	✔	✔	✔	✔
Internal Call Restriction				
PBX Call Restriction				
TIE Call Restriction				
Trunk Transfer Restriction for Incomplete Dial	✔	✔	✔	✔
Common Hold Restriction for Incomplete Dial	✔	✔	✔	✔
Restriction Table	**4**	**3**	**2**	**1**
Permit Code Table	**4**	**3**	**2**	**1**
Maximum Digit Table Assignment	0	0	0	0

Common Restriction Table
00
090
0871
0872
0873

General Restriction Tables			
1	2	3	4
		0	**@**

General Permit Tables			
1	2	3	4
		01509*	**999****
			112
			101

* Replace with customer local area code

** Replace or add any other emergency numbers

Configure Class of Service

Configure your class of service items as shown in the screenshot.

Class 2 is used for the Reception phone/s

Class 3 is used for Hotel rooms phones.

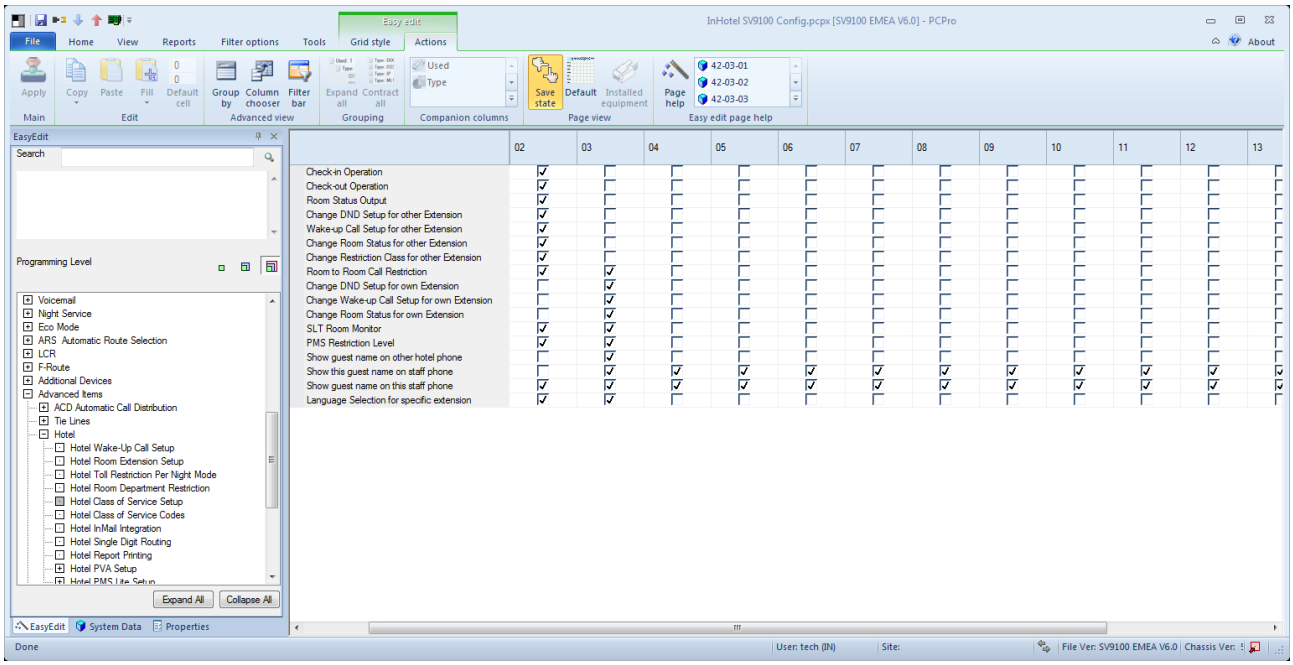


Figure 4 Advanced Items + Hotel + Hotel Class of Service Setup

Configure Wakeup Calls

Configure your wakeup call requirements. See Hotel manual for further details.

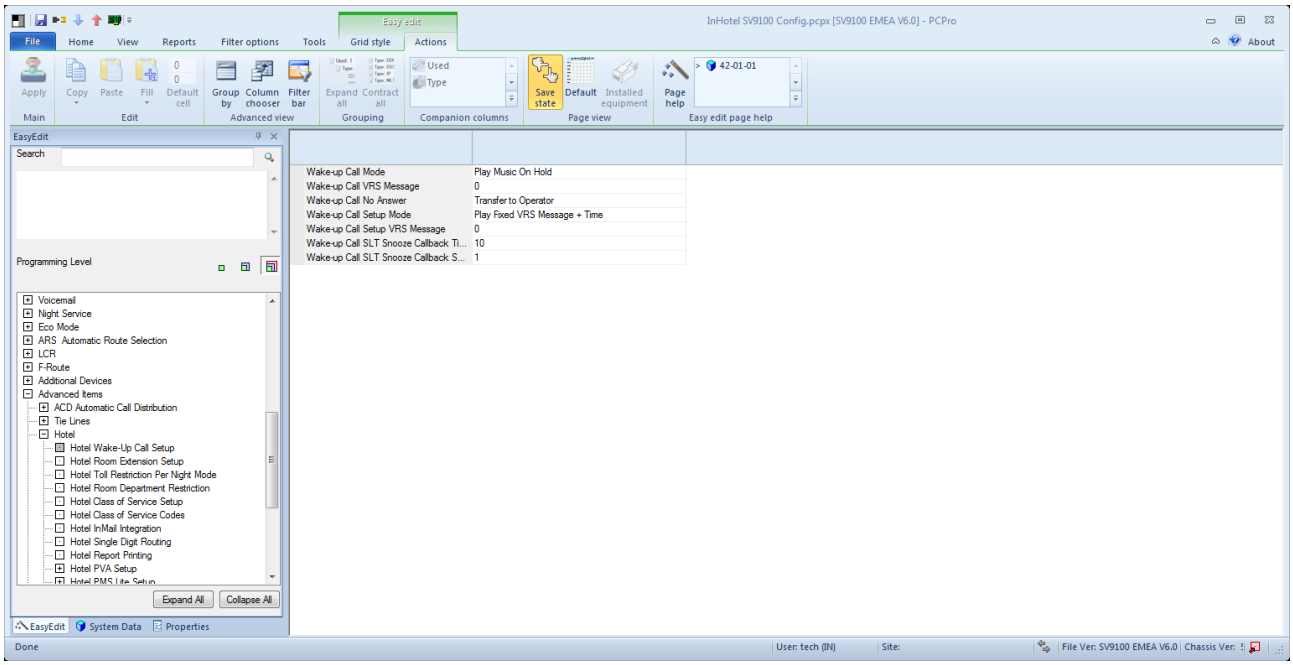


Figure 5 Advanced Items + Hotel + Hotel Wake-Up Call Setup

Setup PMS Output options

The PMS link is used by InFIAS to communicate with the NEC system. The options should be set as shown in the screenshot below.

Enable the 3:00 AM Autoscan if you want to mark the rooms as dirty automatically overnight.

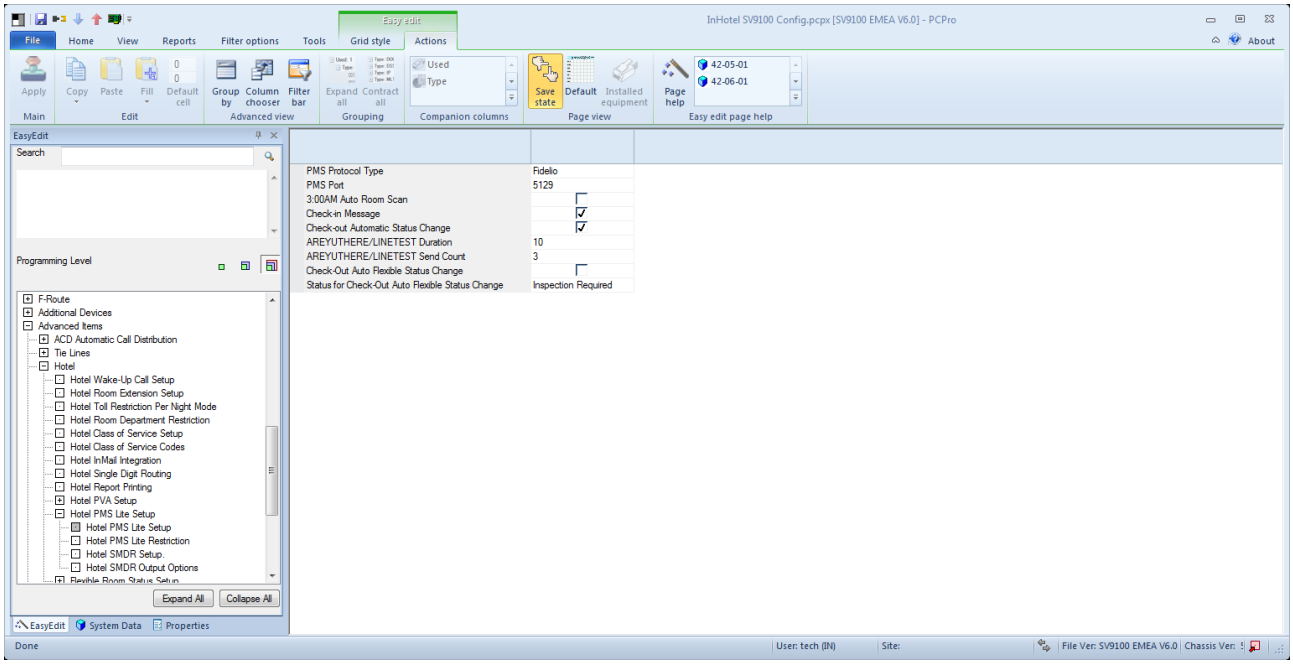


Figure 6 Advanced Items + Hotel + Hotel PMS Lite Setup + Hotel PMS Lite Setup

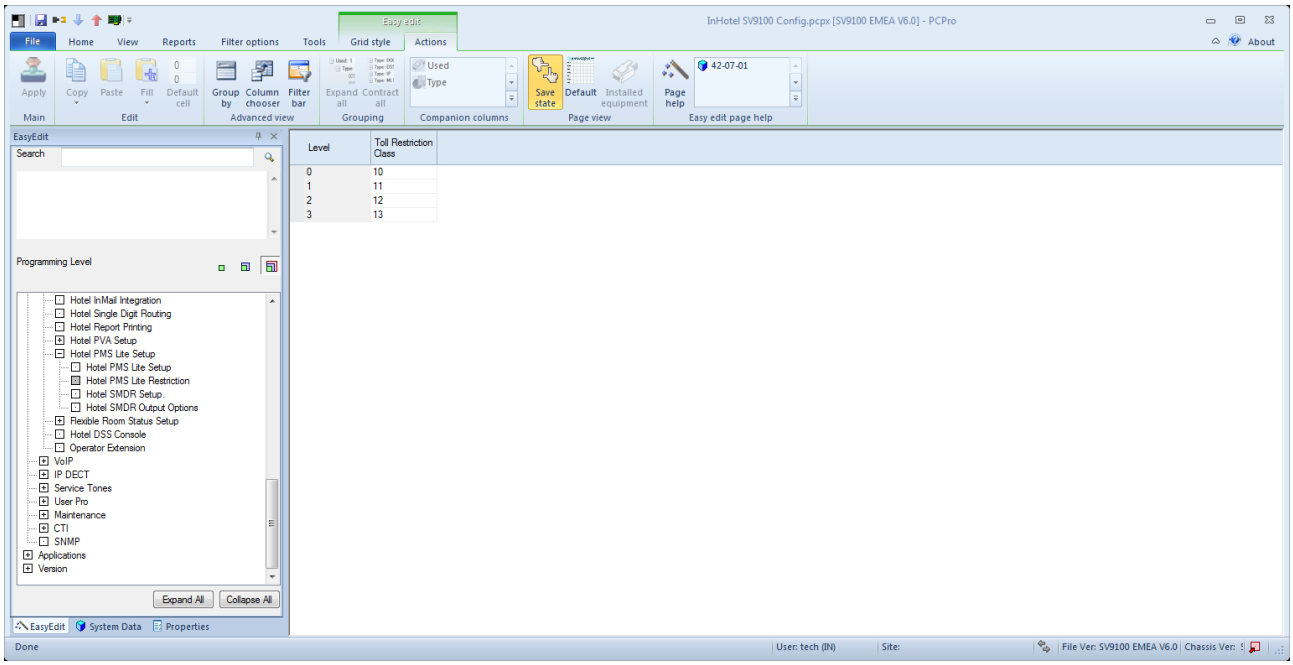


Figure 7 Advanced Items + Hotel + Hotel PMS Lite Setup + Hotel PMS Lite Restriction

Pair Room Status Messages

The room status messages are paired with InHotel

1= Dirty

2= Cleaning

3= Cleaned

4= Inspected

5= Out of Order

6= Out of Service

Ensure the entries in 42-08 are paired, so 1=1, 2=2, etc for these 6 statuses.

ENSURE THIS IS DONE FOR ROOM STATUS 1 AND 2!

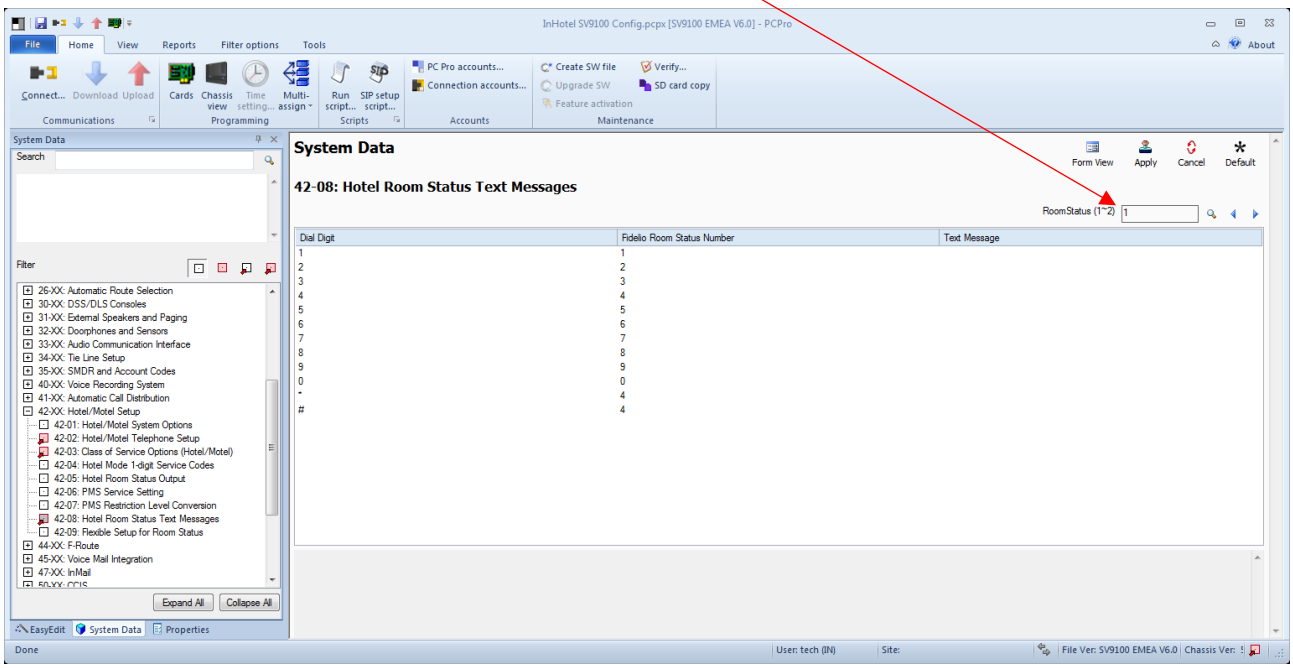
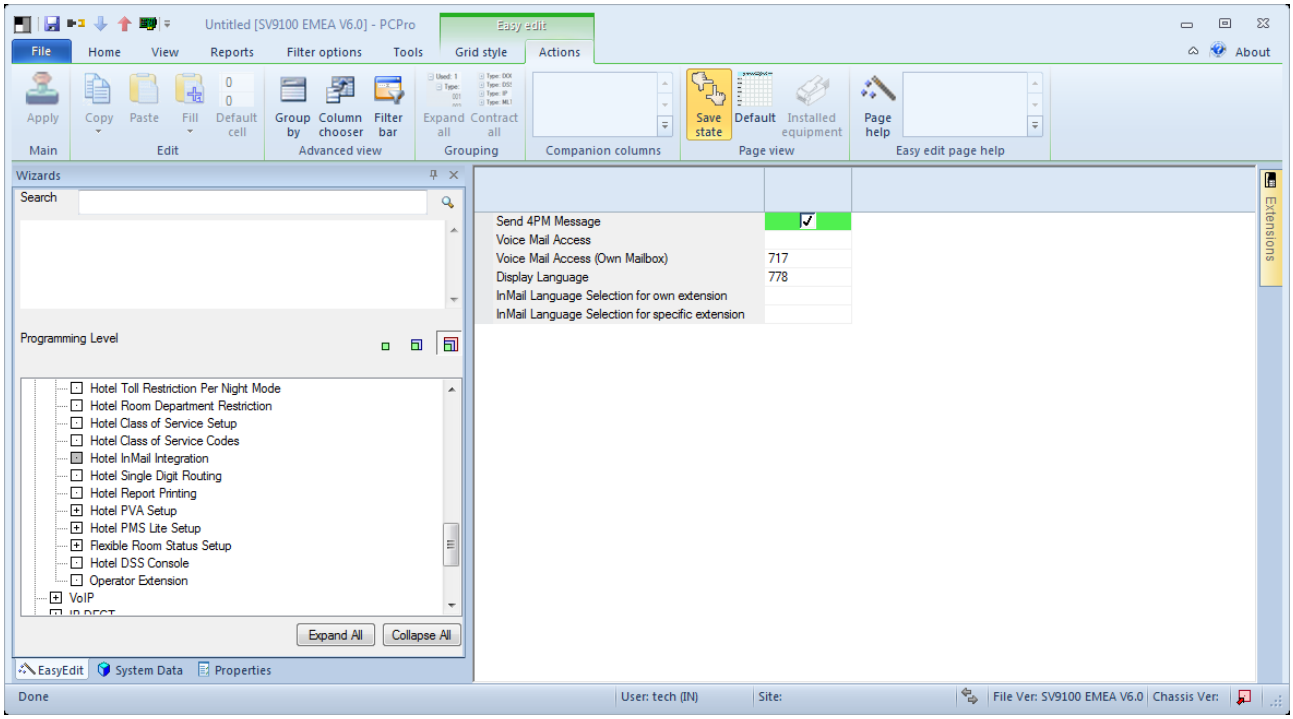


Figure 8 42-08 Hotel Room Status Text Messages

InMail Integration

For integration with InMail Voice Mail system it is necessary to enable the “4PM” message. This function deletes messages, and resets the greetings for a Hotel subscriber mailbox when a new guest is checked into the room.



Installing the InFIAS On-board Application

Click the jigsaw Install icon 

and navigate to the **inFIAS-XXX.pkg** file and select.
Loading should only take a few seconds.

You will then see the InFIAS Application within the list of Installed Applications.

Click the Install icon 

to begin installation..

Installation should take approximately 20~30 seconds

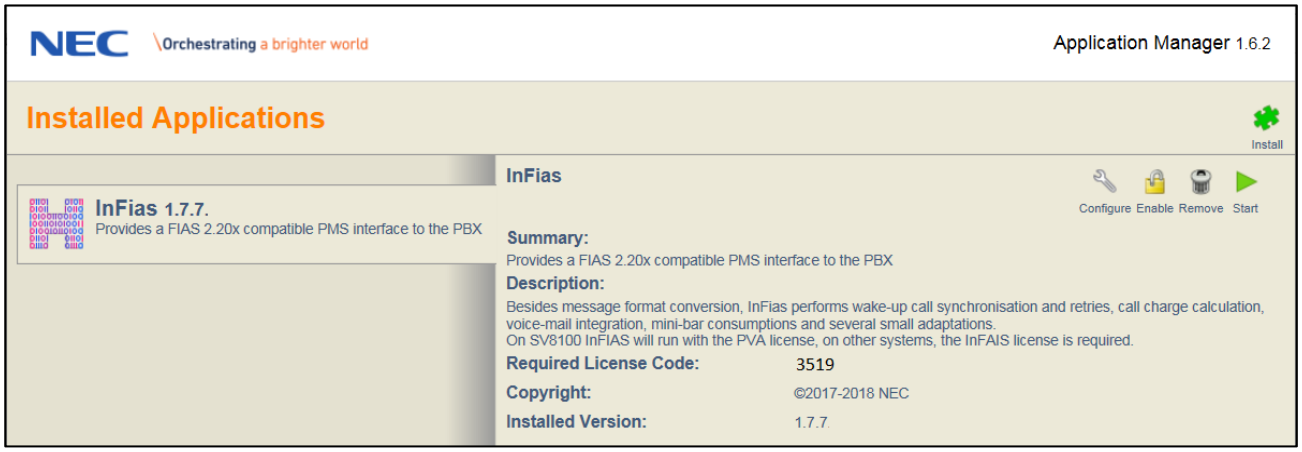


Figure 9 Application manager control page

Starting InFIAS

After the initial installation it is necessary to start InFIAS. Once started the application should continue to run even if the PBX is reset.

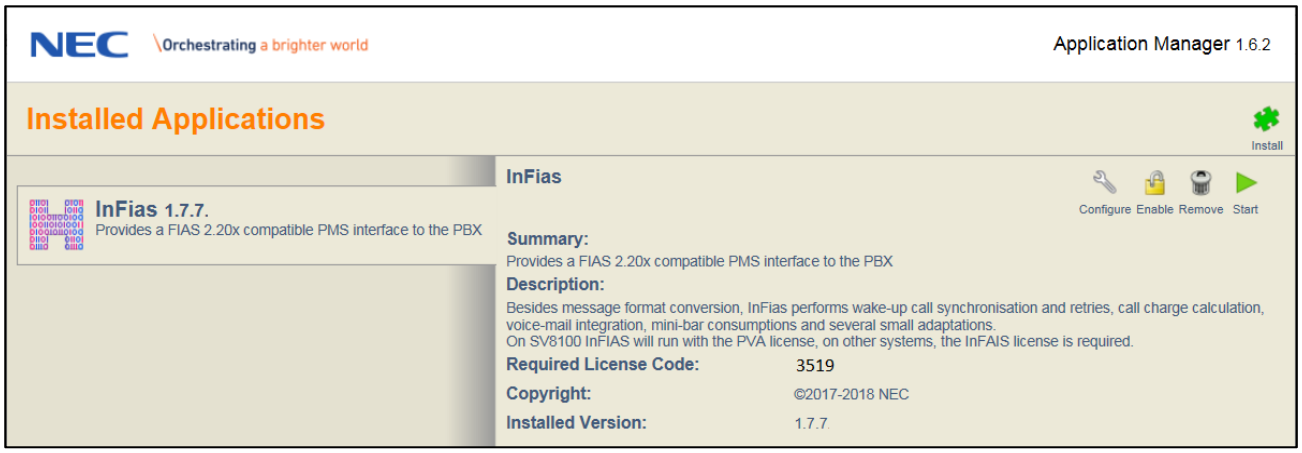


Figure 10 InFIAS summary page

Installing the InOnQ Plug-in

If connecting to an OnQ installation it may be required to also install the InOnQ plug-in, in order to do this click the jigsaw Install icon 

and navigate to the **inOnQ-XXX.pkg** file and select.
Loading should only take a few seconds.

You will then see the InOnQ Application within the list of Installed Applications.

Click the Install icon 

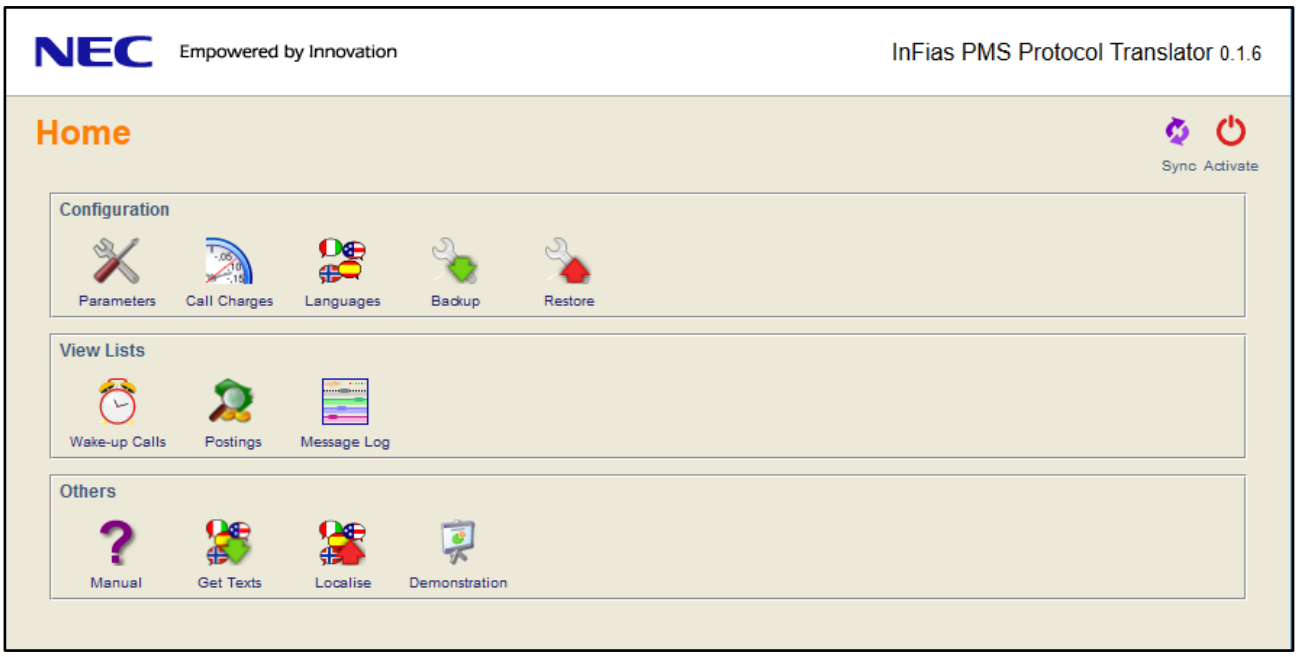
to begin installation..

Installation should take approximately 20~30 seconds

Figure 11 Application manager control page

Configure InFIAS

InFIAS provides a web server for the purpose of configuration and maintenance.



The homepage of InFIAS is divided into three fields, the three fields with icons which open additional pages.

Configuration

This field is for configuring the InFIAS settings.

View Lists

In this field are tools for maintaining the running system.

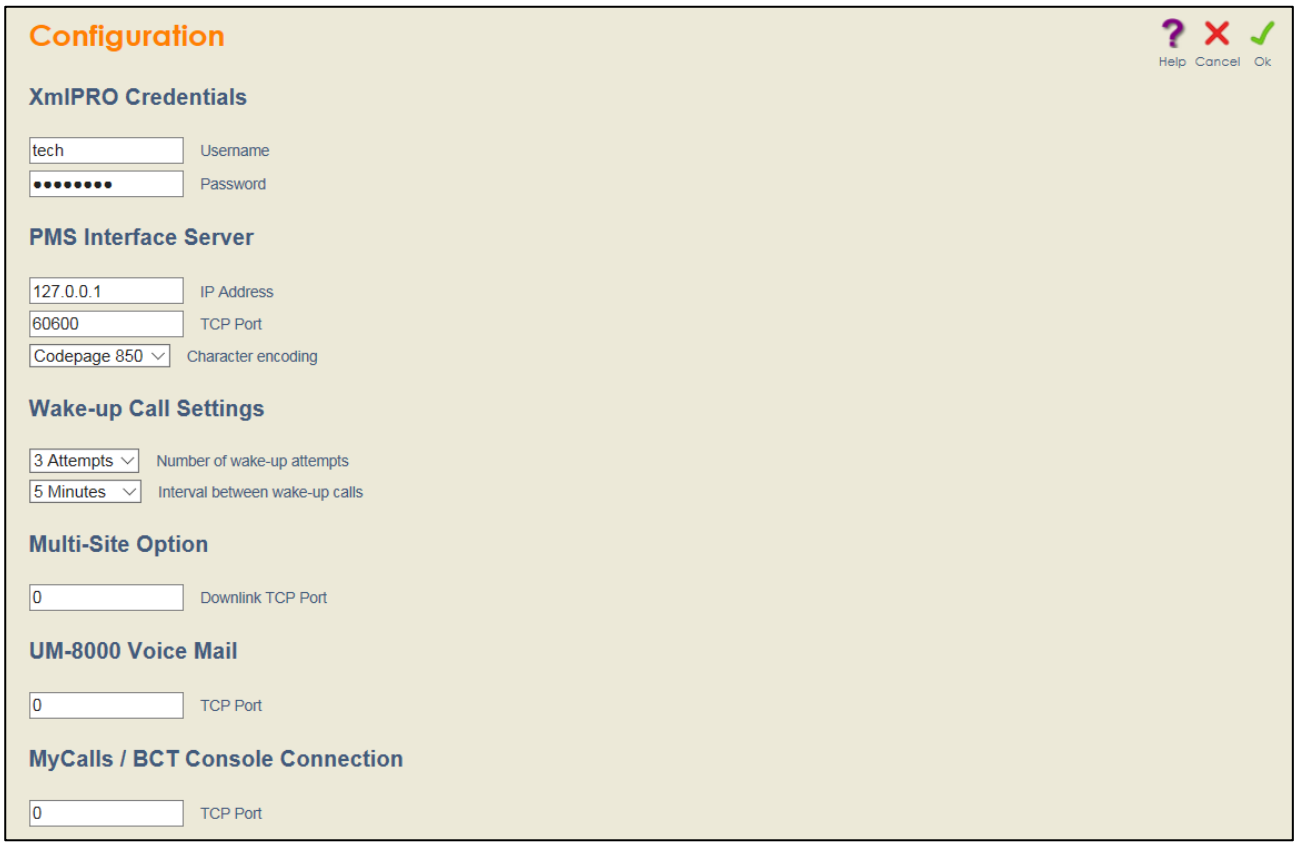
Others

Resyncing the Firmware

To confirm settings click  to trigger a database synchronisation between PMS and PBX through InFias.

Click  on the home page to activate the configuration.

Configuring Connections



Opens the manual

Returns to the Home Page without saving

Applies the changes

The configuration page checks the IP addresses and TCP ports for syntax, consistency and legal values. Each IP address must consist of exactly four integer numbers in the range 0 to 255 separated by a dot. The gateway IP address must be in the same network as the PMS

adapter. The network mask must be a legal one, etc.

Any entry found to be faulty is marked with red color. If no error is found, the above settings will be written to the configuration file.

Click on the restart icon in the home page to let the changed settings take effect.

It is necessary for the Front Of House software to be running in order for the PMS interface to attempt to establish a connection with the PBX.

In the configuration page it is possible to configure the settings for the PMS adapter to operate successfully with the PBX and PC containing FIAS 2.21 compliant Front of House software.

It will probably be necessary to consult with the customers IT department in order to configure the following settings.

Make sure that the PBX configuration is correct.

PMS Addresses

These are the settings relating to the customer's PC containing the Fidelio, or equivalent, Front of House hotel software.

XmlPro Credentials

Enter the user name and password of the SV9100

IP Address

This is the IP address of the PC containing the Front Of House software.

If multi-site option is required, the remote sites define the IP address of the main site.

TCP Port

This is the TCP port configured on the PC for the PMS information.

If multi-site operation is required, the remote sites enter the port number specified in 'multi-site option' of the main site.

Character encoding

Defines the required encoding.

Wake-up Call Settings

Number of Wake-up Attempts

Enter the number of wake up attempts made

Interval between wake up attempts

Defines the interval between wake up attempts

Multi-Site Option

InFias can be daisy-chained to support hotels that use FeatureNet to provide the necessary number of telephones. Towards the Front of House software one interface is presented, internally each telephone system runs a copy of InFias, which connect to each other using a downlink TCP port.

The remote sites connect to the IP address of the main InFIAS and the port as specified here.

Downlink TCP Port

Define the TCP port, InFias waits for connections of a daisy-chained instance.

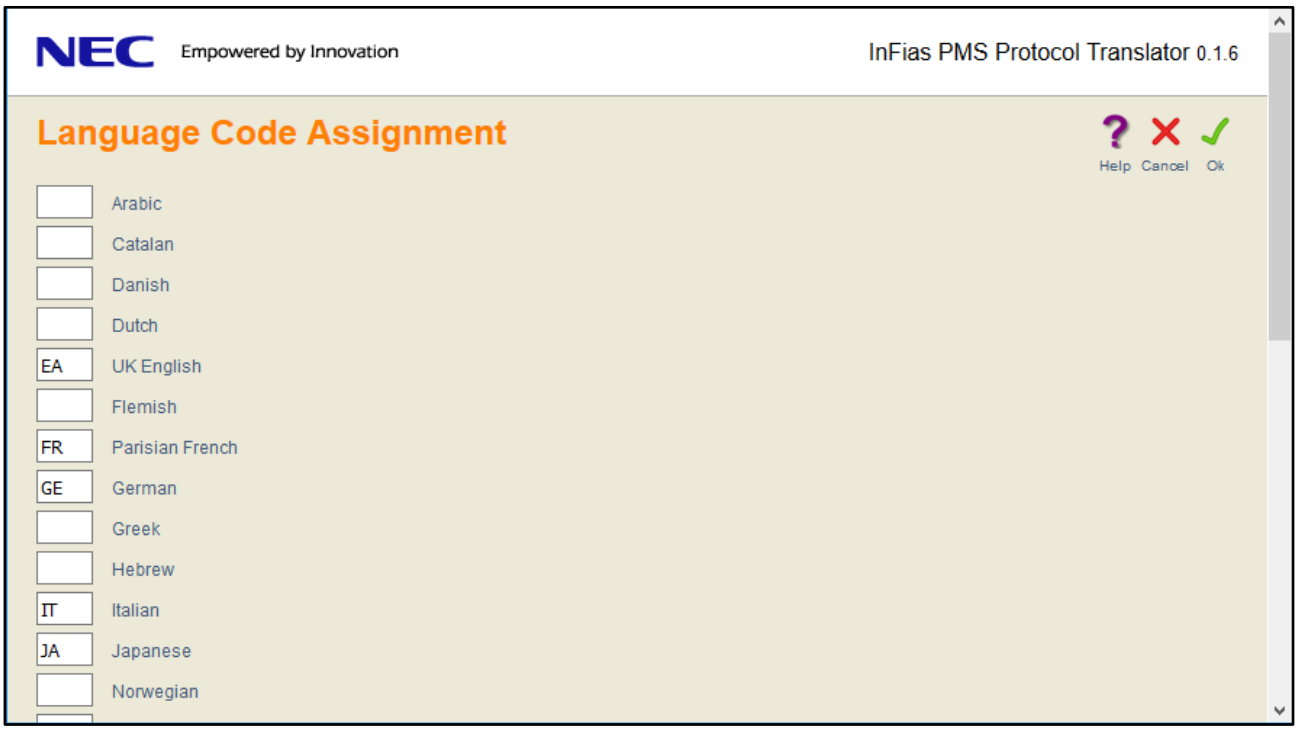
UM8000 Voice Mail (SV9100 only)

If a UM8000 voicemail system is to be controlled via InFIAS, enter the TCP port that the UM8000 shall connect to. The UM8000 must be configured to use the NEC PVA(IP) protocol and the TCP port and the IP address of InFIAS configured there.

BCT/MyCalls Console Connection

If a BCT or MyCalls console is required to display the guest information from a checked in guest, enter the TCP port the BCT or MyCalls console PC is required to connect to.
The console is then required to be configured to connect to the IP address of InFIAS and the TCP port as specified here.

Configuring Languages



Opens the manual

Returns to the Home Page without saving

Applies the changes

InFIAS provides support to select the prompt language of the guest mailboxes in the UM8000 voicemail system. As PMS vendors may have different encodings for languages, here it is possible to define the two-letter code used in the GL| field of check-in message in the FIAS protocol. For each code, a language may be selected. The "default" language is that of the UM8000 system itself.

Call Charge Calculation

InFias software includes a module that calculates for each telephone call a charge based on call duration and dialled number.

The dialled number is checked against the records in an tariff database and picks the longes entry that matches the dialled number. This entry is selected to provide a *charge per interval*, a *charging interval duration*, and a *surplus charge* per call.

The call duration is divided by the *charging interval duration* and the resulting interval count is then multiplied by the *charge per interval*. Finally the *surplus charge* is added.

Finally the charge may be converted to a meter pulse count if the PMS software is configured to receive meter pulses; then the price per meter pulse must be left empty or set to zero, otherwise InFias will divide the charge by the meter pulse price and will send the posting with the meter pulse count rounded up.
In contrast to previous PMSU versions, the price per charging unit and the surcharge are to be entered in the currency unit; e.g, 60 Euro-cent as 0.60.

As InFias receives the call data on the PMS link and no longer on the SMDR link, calls will be charged only for hotel room phones.

Charge Calculation Example

The guest in room 432 has called the number 11850; the call was connected for 49 seconds. The carrier signaled 28 meter pulses. This is the record that InFIAS received from the SV9100's SMDR:

In the tariff database a matching entry has been found :

Number	Price	Duration	Surcharge	Comment
118	0.22	12	0.50	local call

This means 0,22 per charging interval of 12 seconds. Additionally, a surplus charge of 0,50 is added. This brings us to the following calculation:

```
      49        Call duration in seconds
/     12        charging intervall duration
=      4,0833   intervals
^      5        total intervals
  ----------
*   0.22        charge per interval
=   1.10
+     50        surplus charge
=   1.60        total charge
  ==========
```

and a direct posting with a total amount is sent to the PMS:

2009-12-08 10:21:51 — to PMS

```
02 50 53 7c 50 23 39 37 31 7c 52 4e 34 33 32 7c    .PS|P#971|RN432|
44 41 30 39 31 32 30 38 7c 54 49 31 30 32 31 35    DA091208|TI10215
30 7c 50 54 43 7c 44 44 31 31 38 35 30 7c 44 55    0|PTC|DD11850|DU
30 30 30 30 34 39 7c 4d 50 31 36 30 7c 03          000049|TA160|.
```

If a 'sell' price for a meter pulse is defined, e.g. 60 cent, the charge for the call is calculated

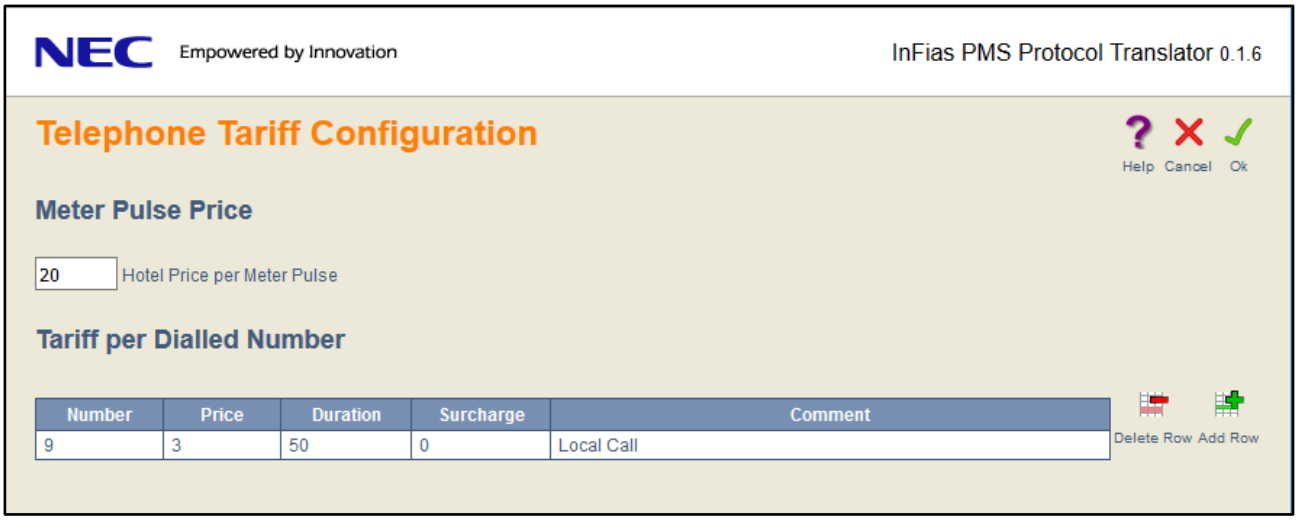
```
=      1.60     total charge
/      0.60     Network Price per Meter Pulse
=      2.6667   meter pulse intervals
^      3        calculated meter pulses
  ----------
=      3        total meter pulses
  ==========
```

The call will be posted as telephone charge with 3 meter pulses:

2009-12-08 10:21:51 — to PMS

```
02 50 53 7c 50 23 39 37 31 7c 52 4e 34 33 32 7c    .PS|P#971|RN432|
44 41 30 39 31 32 30 38 7c 54 49 31 30 32 31 35    DA091208|TI10215
30 7c 50 54 54 7c 44 44 31 31 38 35 30 7c 44 55    0|PTT|DD11850|DU
30 30 30 30 34 39 7c 4d 50 33 7c 03                000049|MP3|.
```

Configuring Call Charges



Opens this manual here.

returns to Home page without saving.

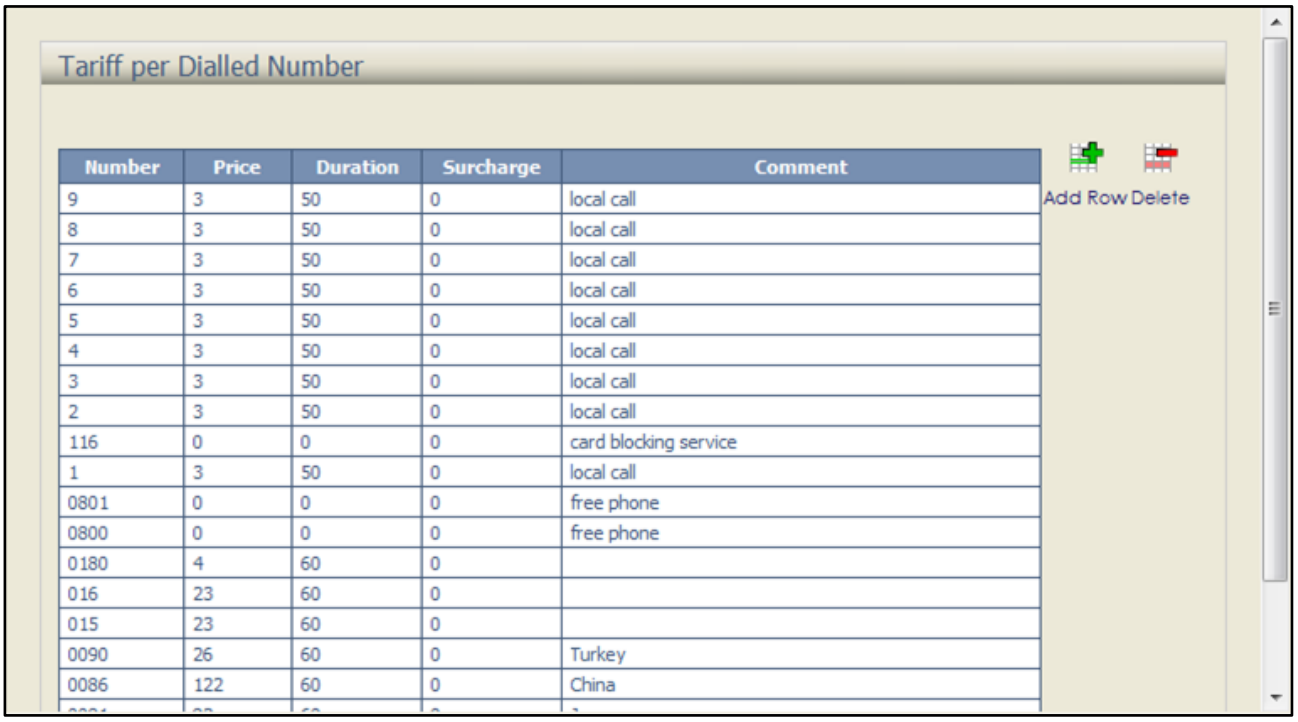
Applies the changes

Click on the activate icon in the home page to let the changed settings take effect.

In the top of the page, a price per meter pulse may be defined. When entered, the call charges will be divided by this price and posted with a number of meter pulses. The value is to be entered in currency unit; e.g. 0.60 for 60 cents. If the meter pulse price is left empty, InFias will send the computed amount directly.

Configuring Call Tariff Database

In the second area one can edit a table with numbers and the according price details. This is the charge per interval ("Price"), the charging interval duration in seconds ("Duration"), and the surplus charge ("Surcharge"). Additionally one may enter a comment per line.



Number	Price	Duration	Surcharge	Comment
9	3	50	0	local call
8	3	50	0	local call
7	3	50	0	local call
6	3	50	0	local call
5	3	50	0	local call
4	3	50	0	local call
3	3	50	0	local call
2	3	50	0	local call
116	0	0	0	card blocking service
1	3	50	0	local call
0801	0	0	0	free phone
0800	0	0	0	free phone
0180	4	60	0	
016	23	60	0	
015	23	60	0	
0090	26	60	0	Turkey
0086	122	60	0	China

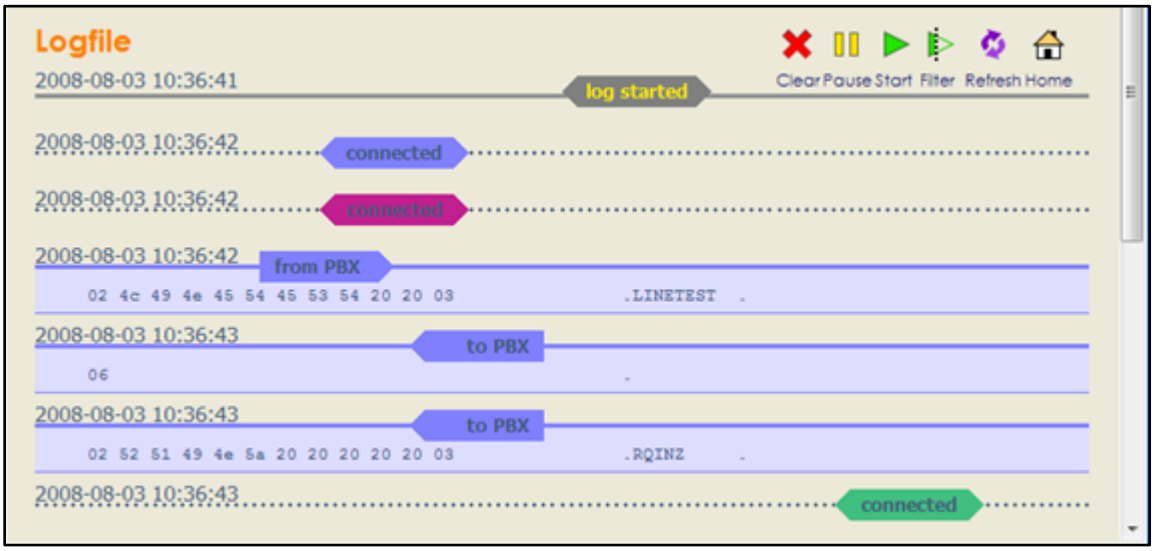
To edit an entry, just click on the table cell and change the values. All prices are in currency units, with a decimal POINT, not comma. The charging interval duration does not need to be an integer value either. If the carrier (or the hotel) likes to charge per 12.5 seconds, go ahead!
The table row you clicked on, becomes the 'current' row that is used to control adding or deleting rows with the buttons:

 deletes the current row and saves it into a buffer. If there is no current row, nothing happens.

 inserts a row below the current row and fills it with the buffered row. If there is no current row, the new line is appended to the table.

Logging Messages

InFias interface has a built-in message log which records each sent and received message. Logging will automatically remove old messages and keep the newest 10000. To view the log with a web browser and to change logging operation, click on the 'Communications Log' icon from the home page.



returns to Home page without saving.

Applies the changes

clears the log

pauses the log without clearing the content.

starts logging of all messages.

switches to filtered logging. When filtered logging is enabled, the log file willl store no acknowledge or keepalive messages (AREYUTHERE, LA) messages. Wake-up answer WA|... and Posting Answer PA|... messages are no acknowledges and therefore logged. Filtering saves considerable amount of memory for logging information exchange. The log file status will be shown as 'log filters'.

Opens the manual here.

returns to Home page without affecting the log. The logfile is checked every few seconds for new messages which are appended automatically to the view. A click on another icon stops this again.

Reading Messages

Each message is displayed with a time stamp, the direction the message was transmitted and, if applicable, its content both as hex dump and in clear text.
Four colours stand for the three main commincation links:

Log Status

These entries show the status changes of the logging and the time when this state has been set. The first entry in the log is always such a status entry. It reflects the actual logging state (started / paused) and is the only entry with a timestamp out of order.

PBX Messages

The PBX PMS protocol basically sends messages that start with a STX (code 02) and end with an ETX (code 03). The bytes in between are clear ASCII text. Messages have fields with fixed lengths. Numbers are represented as a string of digit characters which are padded to the right with spaces if they are to be dialed (room numbers) or padded to the left with 0's if they are values.
The first three characters of each message define the message type and thus the format of the message and its fields.
Each message is explicitly acknowledged with an ACK (code 06) character.
Occasionally, a Negative acknowledge (code 15) is sent when the packet has been received but the action cannot be performed.

For full details consult the PBX PMS protocol description.

Fidelio Messages

The FIAS protocol also sends messages that start with STX (02) and end with ETX (03) with ASCII characters in between, but the message format is different. Each message consists of a sequence of fields that can have variable length and all are terminated with a | character. The first two characters of a field are its name and define the format. The message type is defined by the first field which never has more than two characters. The following fields may be sent in any order.

For a detailed description, consult the FIAS specification 2.11.

An example is displayed below

XmlPRO records

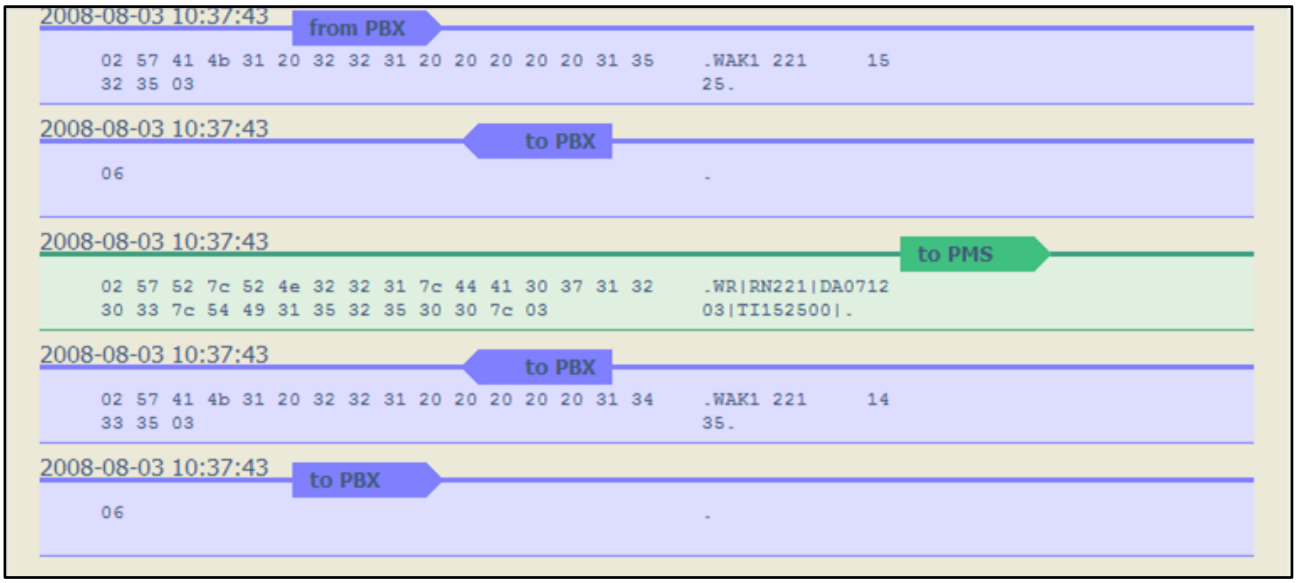
sent to or received from the PBX to set the guest's favourite language in phone display and InMail menu.

InFias reads some system data e.g., the 42-05-06 for the PMS port, which will be seen here as well.

UM8000 Messages

Between PMSU and UM8000 voicemail system, messages are exchanged using the FIAS protocol. These control guest mailboxes, prompt languages and text and voicemail indications.

Example Message Log



This shows how a wakeup call is set for 15:25 from PBX with a WAK1 message that is first acknowledged and then triggers a WR| message towards the PMS.

As InFIAS had in its buffers another wakeup call that has been set for an earlier time (14:35) before, this earlier call is then sent back to the PBX, which acknowledges the new call.

Checking Wake-up Calls

From the home page click the Wake-up Call List icon; this will display table with all wake-up calls that are still pending, sorted by the scheduled date and time. About twuce per minute, the view is refreshed.
The backround colour indicates the wake-up call's status:

Light grey

the call is scheduled

Yellow

The call was ringing and missed once

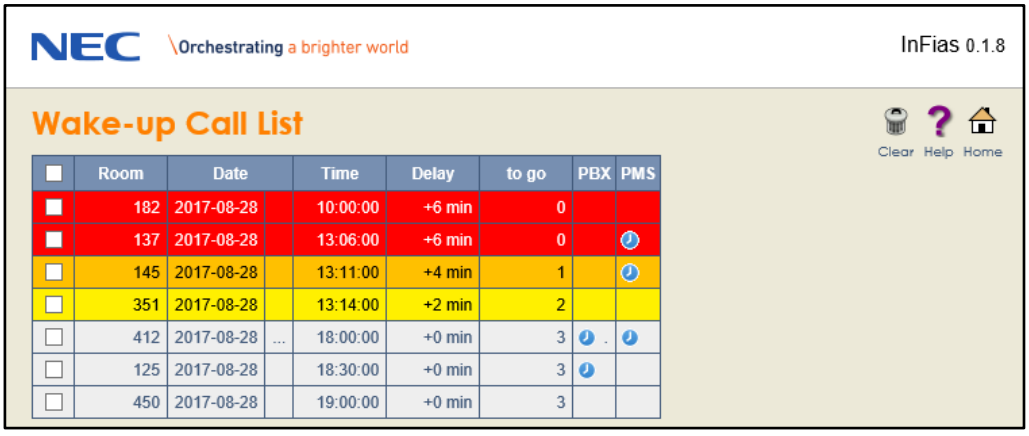
Orange

The call was still not answered although it rang more than once

Red

The wake-up call is finally missed and will not be retried.

The **Date** and **Time** columns indicate when the wake-up call shall ring (the first time). Three dots ... behind the date indicate a daily repeated wake-up call.
The **Delay** field column how much the wake-up is already behind because it has been missed.
The column labelled **n** shows how many times the wake-up call will still be ringing. The **PBX**, **VMS**, and **PMS** columns indicate where the wake-up call comes from by showing a small clock icon in the appropriate field.



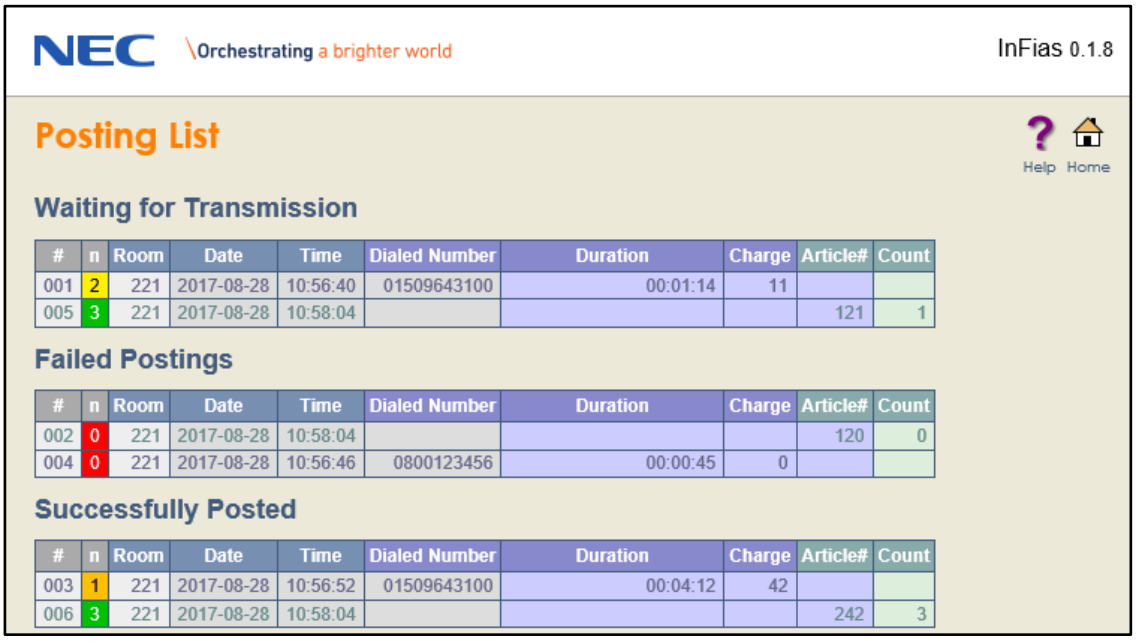
	Room	Date		Time	Delay	to go	PBX	PMS
☐	182	2017-08-28		10:00:00	+6 min	0		
☐	137	2017-08-28		13:06:00	+6 min	0		🕐
☐	145	2017-08-28		13:11:00	+4 min	1		🕐
☐	351	2017-08-28		13:14:00	+2 min	2		
☐	412	2017-08-28	...	18:00:00	+0 min	3	🕐	🕐
☐	125	2017-08-28		18:30:00	+0 min	3	🕐	
☐	450	2017-08-28		19:00:00	+0 min	3		

 One may manually delete wake-up calls from this view by marking them and clicking the trashcan button

 Opens the manual here.

 returns to Home page without saving.

Checking Postings



Opens this manual here.

returns to Home page without saving.

InFias keeps in a buffer all postings that shall be put to a room's bill. A posting is a booking record containing a call or minibar article to be charged to the rooms bill.
From the buffer, postings are sent sequentially towards the PMS. If the link is down, or the PMS does not accept the postings, these postings stay in the buffer and are listed here.
Three tables are displayed.
The first shows the queued postings that have not yet been sent or acknowledged by the PMS system
The second lists up the last up to 100 postings that failed, either because after three attempts no PA (posting answer) message could be received, or because the PA| message contained a AS (answer status) field other than "OK".
The third table contains the last up to 25 postings that were positively acknowledged by the PMS software
Each table has four column groups:

Light grey

columns are posting sequence numbers and remaining number of retries to send the posting to the Fidelio PMS.

Grey

columns contain common data for all postings.

Bluish

columns contain data for call charges only.

Greenish

columns contain minibar data.

The Retry count field 'n' changes colour to indicate the amount of retries made.

Green

3 attempts remaining. The record has not yet been sent

Yellow

2 attempts remaining. The record has been sent once, but not yet acknowledged

Orange

1 attempt remaining

Red

Retry count exceeded. InFIAS gave up resending.

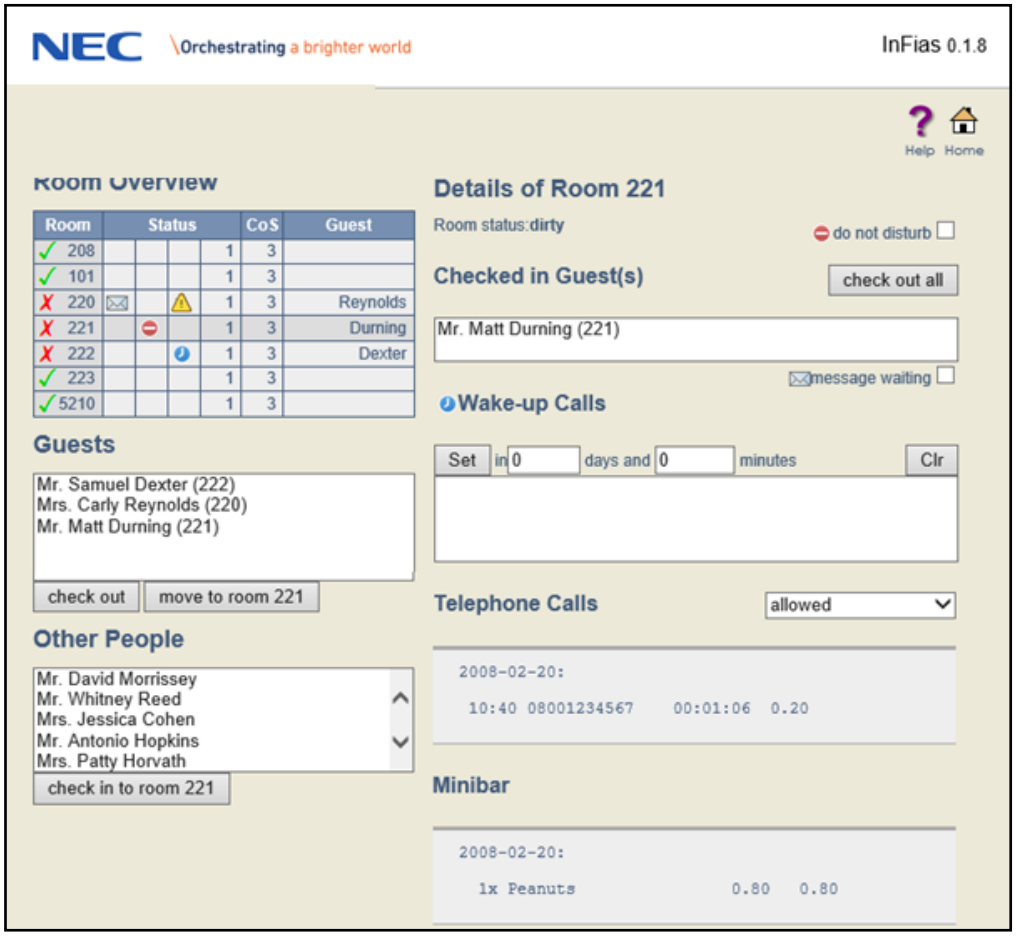
This happens according to Fidelio specification after 3 tries to send it, which takes 30 seconds when the link is up. When the link to the PMS is down, no tries are made and the time does not expire.

Demonstrating the InFIAS Functions

InFIAS has a built-in demonstration feature, which allows to show the features and functionality of the InFIAS. It is enabled when the PMS IP address is set to 127.0.0.1 in the configuration page. It can be accessed by clicking on Demonstration icon in the home page.

This loads an AJAX application into the browser which periodically polls the message queue for the Fidelio PMS and updates the local room and guest data.

Postings are automatically acknowledged.



Operation

The Demonstration Tool starts automatically after loading.

 Opens thie manual here.

 returns to Home page without saving.

Room overview

This table contains for each room a row with a room status overview.

Clicking on a row selects the room for further actions and shows its details on the right side.

Left to the room number a green OK sign ✓ shows that the room is vacant; i.e. has no guests. A redcross ✕ indicates that the room is occupied.

In the second column the message status is shown. If a guest within this room has a message, an envelope symbol is shown.

Next is the Do-Not-Disturb status. If it is set for a room, a 'do-not-enter' traffic sign is shown.

In the third column pending wake-up calls are indicated with a clocksymbol ; missed wake-up calls show up with a warning sign.

The next column gives an indication for the maid status of the room (1...6), Followed by the dial restriction class of that room.

The last column contains the name of the guest as it is sent to the PBX.

Guests

This is the list of people that have been checkin in to a room. The room number is shown in brackets.

Clicking on the guest selects it and automatically selects the room he/she is checked in. The selected guest can be checked out or moved to another room after that has been selected in the room overview table.

Other People

These predefined list of names are yet checked in. You can check in the selected person to the selected room with a click on the button check-in.

Room Details

In the room details, you can see the room's cleaning status and the Do-not-Disturb status, which also can be changed. Next, there is the list of guests that are check in to that room. After having selected a guest, you can change its message status, which in turn affects the message lamp of the room telephone. Below the guest list there is the list of wake-up calls that have been set for the room. Missed calls are marked in bright yellow. Calls can be cleared and new calls set from the room's phone, the front desk phone or from the demonstration tool. For speed, in the demonstration tool the target time is entered as a time from now, not an absolute time.

At the list of telephone calls you can select the restriction class for the room. Also you will get a list of calls

which have been made from the room's phone.
Below that a similar list exists for the minibar consumptions which can be entered at the room's phone with a a service code. The minibar articles and its prices are predefined.

Sent and Received messages

Here you can see and show that all communication is handled with original FIAS messages and you also can see what actually is transmitted to perform an action.

NEC Enterprise Solutions reserves the right to change the specifications, functions, or features at any time without notice.

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