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August 2011

Remarks about the FW licence and FW update

Starting with FW-Version 00.06.07.00 every FW needs a licence file to enable the functionality of the target system. If the licence file is missing no calls can be made only remote access is possible. The licence file is transmitted to the target system using the NovaTec configuration software or is already present in the target system if a new system is purchased. The following needs to be considered when updating a system:

For running systems or newly purchased systems using FW 00.07.00.55 (or higher) which are configured with NMP 6.5:

Your system already has a valid licence file and NMP 6.5 software allows the transmission of configuration data without loading a licence file. The licence file will stay in the target system. It will only be deleted if you overwrite it with another licence file or if you delete the target system's flash. You only need a new licence file if you update to a future, not yet existing FW version 00.07.01.00 or higher.

General remarks on FW updates:

In general a new licence is required whenever you update to a non bugfix FW version. A non bugfix version differs in more than just the last two numbers from the previous installed version. e. g.:

Update from 00.06.07.00 to 00.06.07.02:

Update to a bugfix firmware version. No new licence is required.

Update from 00.06.07.00 to 00.07.00.55:

Update to a FW version including new features. A new licence is required.



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NovaTec release information firmware 00.07.03.01

- 1. Bug fixes included in this release**
- 2. New features**
- 3. Other Changes**
- 4. Known Issues**
- 5. Dependencies**

1. Below is a list of bug fixes that have been resolved in this release

- If a system was configured to act as a RMCS client data calls were rejected in the case that no RMCS server was reachable. With this release the characteristics have been changed as follows:
 - If no RMCS server is reachable and the system runs with the internal clock the data call will still be rejected.
 - If no RMCS server is reachable and the system is synchronized over an external clock source (e.g. BRI in slave mode) now the call establishment will continue.
- If a system called another NovaTec SIP GW which was connected to the public network it did not synchronize to the RTP stream of that GW. The problem has been solved.
- The system performed a reset if too many simultaneous remote access connections existed. The problem has been solved. There is still a limit of 18 simultaneous remote access connections. But further remote access connection attempts will not lead to a reset but are unsuccessful.
- If a target system has never been used in TLS mode before and was updated to firmware version 00.07.03.00 the system performed a continuous system reset after the firmware update. The problem has been solved.
- If a system communicated with a TLS secured NMS but the certificate was not yet signed a system reset could occur if the LAN cable was plugged out and back in the same moment in which a call home occurred. The problem has been solved.
- In the following installation scenario a caller did not hear an alerting tone:
TDM phone → NovaTec GW (TDM only) → ISDN trunk → NovaTec GW (TDM to SIP) → CUCM → NovaTec GW (SIP to TDM) → TDM phone.
The problem only occurred if the caller dialled number by number. If en bloc dialling was used the alerting tone was present. The problem has been solved.



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- The following installation scenario caused problems with hold and resume:
TDM phone → NovaTec → CUCM → ASCOM Dect → Dect phone. The following list shows the detailed call flow:
 - User A (NovaTec) called user B (ASCOM Dect) (the direction did not matter)
 - User B answered the call
 - A and B could talk and hear each other
 - User B put user A on hold
 - User A heard the hold music
 - User B resumed the call
 - The call between user A and B was active again but they could not hear each other.The problem has been solved.
- In the TLS handshake the time sent by a NovaTec-GW was incorrect. The problem has been solved. It did not have any influence on TLS connections. Now the NovaTec-GW sends the correct local time in the TLS handshake.

2. New features

Call Transfer over SIP trunk

The system now supports call transfer using the SIP REFER method. This method can be activated by the system configuration. In case the REFER method is configured all Call Transfers activated on the TDM side will be handled on the SIP Trunk within the SIP network. In case this feature is not configured the Call Transfer will be performed within the TDM switch of the gateway.

The procedure using the REFER method has got the following advantages:

- The numbers in the display of the transferred users will be updated
- The RTP stream will be sent between the transferred users directly without passing the NovaTec GW
- All resources (channels, codecs) in the NovaTec GW are freed after the transfer and can be reused for new calls

ANS, /ANS, ANSam, /ANSam telephone events

The firmware now supports the generation of the telephone events ANS, /ANS, ANSam and /ANSam according to RFC2833 as a fixed (non configurable) option. The events are generated in TDM to SIP (RTP) direction. Receiving these telephone events from SIP (RTP) and playback to TDM is not supported.

3. Other changes

None

4. Known issues

With a S3 connected to a CUCM as a line device it can happen that a calling IP phone receives a ring back tone even when the callee behind the S3 is busy.

In case an ISDN phone behind a NovaTec gateway is busy it will take 3 seconds until the caller will be informed that the callee is busy. This behaviour is mandatory for the ISDN bus and is specified in European and international ISDN standards. This is not a bug but because of this ISDN behaviour the user experience is different compared to SIP to SIP or SIP to analogue calls.



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Call forwarding busy on the S3 is not working if it is activated from the ISDN or analogue phone. The locally forwarded call from the S3 is rejected from CUCM with "Busy here". But the destination of the call has got no active call. The problem is caused by the "Busy trigger" in the CUCM configuration for the S3. As a work around call forwarding busy can be activated in the CUCM configuration.

It can happen that there is only a one way audio connection after the transfer if two TDM calls at the same NovaTec-GW are transferred by a SIP phone connected to a CUCM.

5. Dependencies

S3 registration as a line device in CUCM:

The feature requires NMP version 6.3.2 or higher and CUCM version 7.1.2.

Feature Data-Calls with clear channel codec (X-CCD):

The feature requires NMP version 6.3.2 or higher and CUCM version 7.1.2 or higher.

Feature TLS:

The feature requires NMP version 6.7.0.4 or higher and CUCM version 7.1.3 or higher.

Feature MLPP:

The feature requires NMP version 6.6 or higher. If the NovaTec-GW is connected to a CUCM MLPP works only on SIP trunks. The feature cannot be used on a S3 which is configured as a line device.

Feature RMCS:

The feature requires NMP 6.7.0.4 or higher. To use RMCS on a S3 a special S3 hardware is required (article no. 1F8xxx-R). To use RMCS on a CCU3 based system, the CCU3 must have at least the R-State R8E.

Feature 3PTY:

The feature requires a CCU3 based system and cannot be used on a S3.

Feature SCEP:

The feature requires NMP 6.7.0.4 or higher.

The firmware has no dependencies to NMS or TI-CA.

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NovaTec Kommunikationstechnik GmbH



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NovaTec Release Information Firmware 00.07.03.00

This firmware release is only to be used by NovaTec for production purposes. Any copy or usage by the customers is prohibited.

- 1. Bug fixes included in this release**
- 2. New features**
- 3. Other Changes**
- 4. Known Issues**
- 5. Dependencies**

1. Below is a list of bug fixes that have been resolved in this release

In the previous version the firmware did not block access to the target system via USB or V.24 if TLS was configured. The problem has been solved. As soon as TLS is activated no access via USB or V.24 is possible (access via ISDN also is not possible but this was already the case with previous firmware versions).

If an analogue phone was connected to an analogue interface which had no subscriber configured making calls was not possible. If the user picks up the handset he receives a fast busy tone indicating that a call is not possible. In this situation a system reset occurred if a user pressed a key on his phone. The problem has been solved.

A problem regarding the Call Home event "CPU-Usage Threshold-Event" has been solved. With previous firmware release it could happen that the target system did not send all status messages. E. g. it could happen that the system sent a CPU load high indication but not a CPU load normal indication after the system returned to a normal CPU load.

With previous releases it could happen that the Call Home events "Invalid FW licence-Event" or "Invalid TLS licence-Event" were not sent. The problem has been solved. Please keep in mind that the event "Invalid TLS licence-Event" can only be sent by a target system if the Call-Home connection to the NMS is not secured by TLS. As the reporting of any Call Home events will fail if the TLS licence is invalid.

If an ISDN subscriber picked up the handset and dialled an unknown number the calls were rejected indicating "Unknown/unallocated number" in the phone display but the user did not hear any tone. The problem has been solved. Now in addition to the indication on the user display he also receives a fast busy tone.

With previous firmware releases it could happen that the Call Home event "Layer 2 inactive" was not sent only if the event occurred but also every 10 seconds after the event occurred. The problem has been solved. The event is now only reported once if the layer 2 state of an interface changes from active to inactive. The problem did not occur if you just pulled out the ISDN cable. It did occur if a miss-configuration existed on an ISDN trunk or cross connection (this means the NovaTec GW runs the interface in point-to-point mode but the connected device runs it in point-to-multipoint mode).

If a TLS maintenance connection was established (e. g. via Trace Info Client) it was not possible to establish new phone calls until the TLS connection became active. Existing calls were not affected. The problem has been solved.

A possible system reset in conjunction with T.38 fax calls has been fixed. The problem occurred if the SDP/RTP data changed during an active T.38 call (Re-INVITE).

On the S3 the disabling of tones and announcements (see "NovaTec-System/Options/Tone generation options") lead to wrong tones being played to the user (e.g. a user heard a ring tone after



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he picked up the handset instead of the internal dial tone). The problem has been fixed by ignoring the configuration option on the S3. This means the S3 can not disable its tones. Because the option to disable the tones is only meaningful on the CCU3 to save switching equipment resources this characteristic causes no limitations or problems on the S3. The problem did not occur on the CCU3.

A system reset occurred in the following situation:

- a user logs in to the target system using Trace Info Client
- he starts the “System diagnosis layer 1”
- he right clicks on the GPS channel of a BCU card
- the context menu shows up
the user selected the item “trace” or “Reset statistics”
- the system performed a reset

The problem has been solved.

A system reset occurred under the following circumstances:

- user A called user B
- user B was member of a line group
- user B forwarded the call to user C (a SIP or analogue phone)
- user C answered the call
- the system performed a reset

The problem has been solved. The problem did not occur if user B was not member of a line group, or if user C used an ISDN phone or if the call was not answered by user C.

In some situations the numbers displayed in a users phone after a call transfer were not correct especially when the feature CLIR was used. The problem has been solved.

2. New features

The RSA key length has been increased from 1024 bit to 2048 bit. At the first start up of a target system with this firmware version the new 2048 bit key will be calculated. This calculation can take up to 10 minutes. During this time all services using TLS are not available. That means a target system which is fully secured can not establish SIP, Maintenance or Call-Home connections during this time. Once the new key has been calculated the target system will not calculate it again at the next start up. If a system which is already TLS secured is updated to this firmware the already present certificates in the system do not match the new key. Therefore in this case the following update procedure is required:

1. Download latest configuration
2. Disable TLS
3. Upload configuration
4. Upload new firmware with system reset
5. Enable TLS again
6. Upload configuration with system reset
7. Sign certificate
8. Reset the system

The system now supports MLPP. To configure MLPP NMP 6.6 is required. On ISDN interfaces only the stimulus protocol of MLPP is supported. MLPP is not supported on ISDN point-to-point interfaces (e.g. Q.SIG interfaces or DSS1 cross connections). On the SIP side the resource priority header (RFC4412) is used for the signalling of the precedence level of a call.

The system now supports SCEP according to IETF “Cisco Systems Simple Certificate Enrollment Protocol draft-nourse-scep-20” (Cisco Systems' Simple Certificate Enrollment Protocol).



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The new SU04 board is now supported. NMP 6.6 is required to configure the new daughterboard. The new SU04 board replaces the old S04 board which is no longer available.

The new feature RMCS (Remote Master Clock Source) makes it possible to synchronize SIP data calls over a central clock server. If a data call is established the client target system first calls the RMCS server by establishing a normal SIP data call. The RMCS will answer the call and send a RTP stream to the client. The client uses this RTP stream as a clock source for synchronization and continues to establish the user's data call. If the user's data call has been cleared the connection to the RMCS server will also be cleared. This means the connection to the RMCS server is established on demand only.

Blind Transfer according to ETSI ETS 300 389-1 is now supported. That means that a user having an active call can now transfer this call to another call while the other call is alerting but not yet connected. Previously a user could only transfer two calls if both calls have already been answered.

3PTY on analog and ISDN interfaces according to ETSI ETS 300 188-1 is now supported. The feature can only be used on CCU3 based systems. The S3 hardware has not got any conference bridge build in and therefore does not support the feature. On CCU3 based systems only one three party call can be active simultaneously. If a user tries to establish a three party call while another has already established a three party call the second request to establish a 3PTY conference will be rejected. A three party call can also be initiated on IP phones connected to a CUCM. In this case the feature does not use the bridge resources on the NovaTec-GW/CCU3.

The firmware includes an interface to NGN-MC to query the number of active calls if you use the NGN-MC service you need to use this firmware version or newer versions.

The firmware now saves the system time in the systems residential flash memory every hour. This prevents TLS certificates from becoming invalid if the system loses its time after a power on reset.

3. Other changes

None

4. Known issues

With a S3 connected to a CUCM as a line device it can happen that a calling IP phone receives a ring back tone even if the callee behind the S3 is busy.

In case an ISDN phone behind a NovaTec gateway is busy it will take 3 seconds until the caller is informed that the callee is busy. This characteristic is mandatory for the ISDN bus and is specified in European and international ISDN standards. This is not a bug but because of this ISDN characteristic the user experience is different compared to SIP to SIP or SIP to analogue calls.

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If a target system has never been used in TLS mode and such a system is updated to firmware version 00.07.03.00 the system will perform a continuous system reset after the firmware update. Therefore this firmware release may only be used for production purposes and cannot be used by or made available for customers.



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5. Dependencies

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