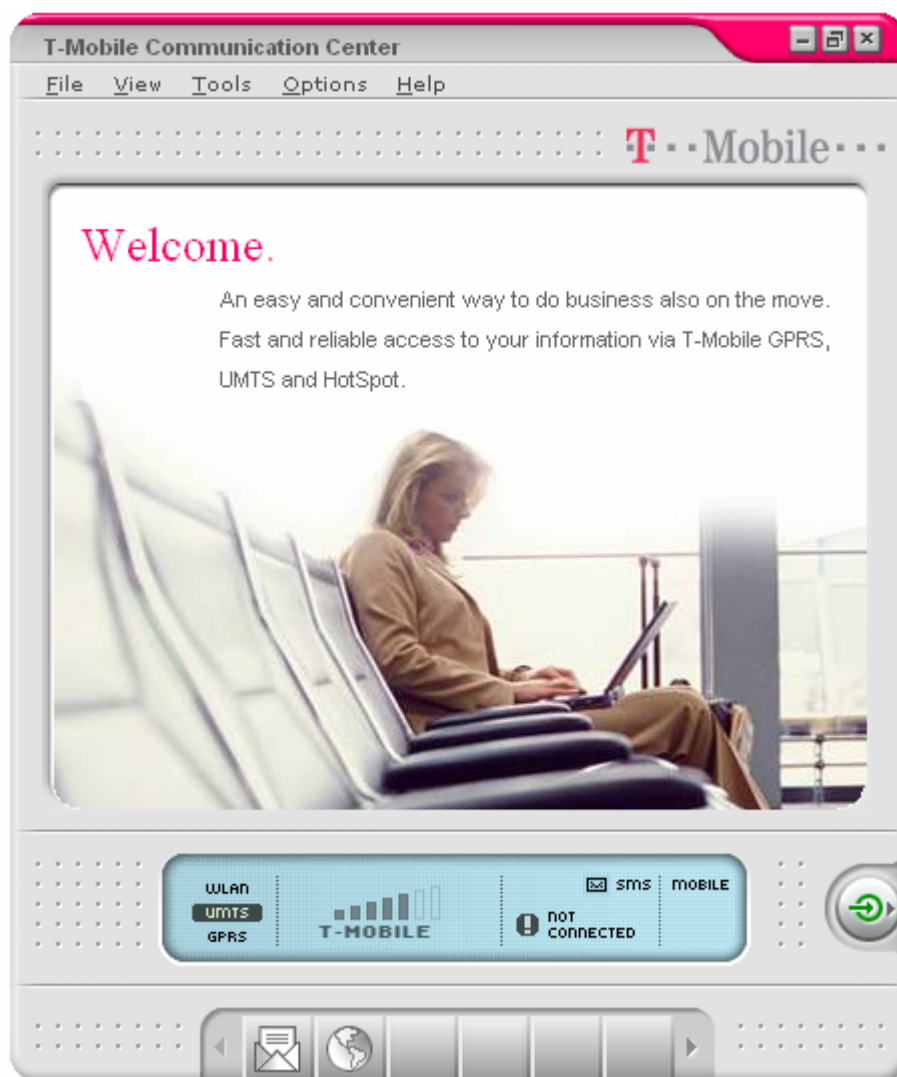


T-Mobile

Communication Centre Software

User Guide



Trademarks

T-Mobile and T-Mobile Communication Centre are registered trademarks of Deutsche Telekom Group.

Windows 98SE, Windows 2000 and Windows XP are trademarks or registered trademarks of Microsoft Corporation.

Nokia, GPRS PC-card from T-Mobile and other products mentioned are trademarks or registered trademarks of their respective owners.

Bluetooth is a trademark owned by Bluetooth SIG, Inc. Other product and brand names may be trademarks or registered trademarks of their respective owners.

Disclaimer and Limitation of Liability

T-Mobile assumes no responsibility for any damage or loss resulting from the use of this handbook.

T-Mobile assumes no responsibility for any loss or claims by third party, which may arise through the use of this software.

T-Mobile assumes no responsibility for any damage or loss caused by deletion of data as a result of malfunction, dead battery, or repairs. Be sure to make backup copies of important data on other media to protect against data loss.

Important: Please read and accept the End User Software License Agreement with this product before using the accompanying software program(s). Using any part of the software indicates that you accept the terms of the End User Software License Agreement.

Introduction	5
1 PRE-CONFIGURATION	6
2 CONFIGURATION.....	8
2.1 Connections	10
2.2 Connection Profiles	10
2.3 Select Active Profile.....	11
2.4 Tasks	11
2.5 User Settings.....	12
2.6 Default Devices.....	13
2.7 Import.....	13
2.8 Export	13
2.9 Restore Configuration.....	14
3 CONNECTIONS	15
3.1 Pre-configured ones.....	15
3.2 Create New Connections	16
3.3 Configure Connections.....	17
3.4 Delete Connections	17
3.5 UMTS/GPRS Specific Settings	18
3.6 WLAN Specific Settings.....	19
3.7 LAN Specific Settings.....	20
3.8 Settings Common to all Bearer Types	21
4 LAUNCH OF APPLICATIONS	24
4.1 Internet Browser.....	25
4.2 Email Client	25
4.3 Custom Application.....	25
4.4 VPN Client	26

5	TOOLS AND FURTHER FEATURES	27
5.1	WLAN Sniffer	27
5.2	HotSpot Locator	28
5.3	SMS Center	29
5.4	Usage Monitor.....	31
5.5	Set Password	33
5.6	Restore Configuration.....	33
5.7	Software / firmware Update	34
5.8	Flight Mode	36
6	GPRS/UMTS DEVICE SETTINGS	37
6.1	PIN Management.....	37
6.2	Network Selection.....	37
6.3	Frequency Band.....	37
7	APPENDIX.....	38
7.1	TCP/IP settings	38
7.2	Redistributable	39
7.3	Email Wizard	40
8	TROUBLESHOOTING	42
8.1	Common Troubleshooting Procedures	42
8.2	Communication Centre Error Messages	42
8.3	Summary of some useful Troubleshooting Tools.....	47
8.4	UMTS/GPRS Troubleshooting.....	49
9	DEFINITIONS AND ABBREVIATIONS.....	58

Introduction

The T-Mobile *Communication Centre Software* is an innovative software solution for laptops which facilitates access to numerous mobile office communications functions. The solution allows users to connect and browse on Internet wirelessly and to reach their internet content or e-mail accounts as well as key in and send text messages (SMS) without difficulty over the graphical user interface.

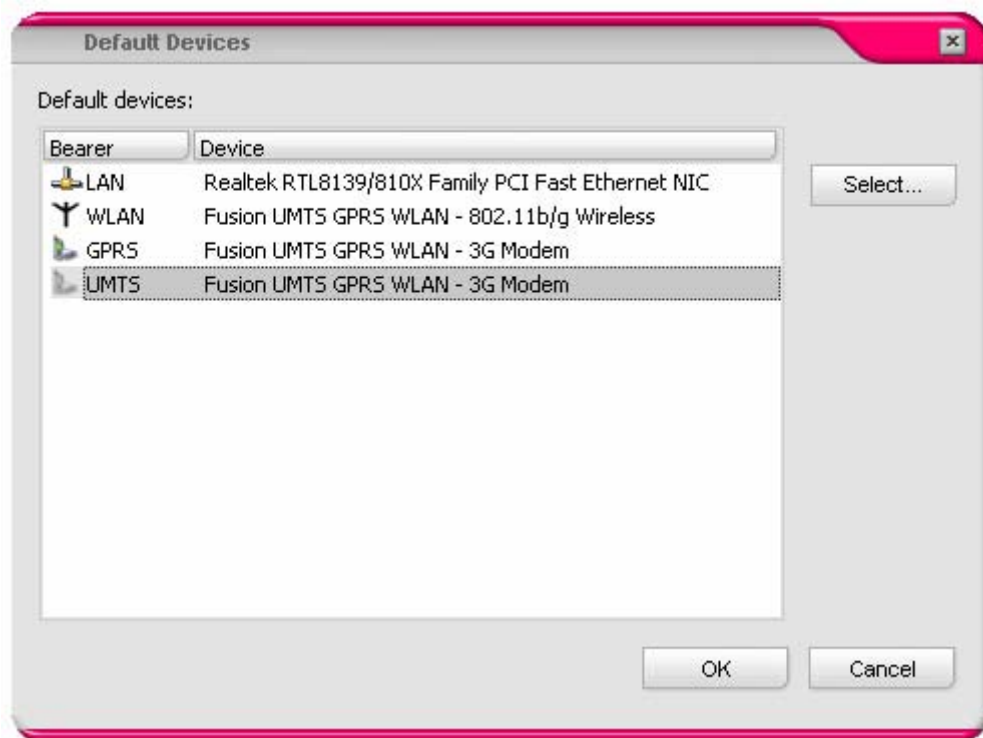
The *Communication Centre Software* is installed and configured within a few minutes. The intuitive interface is based on colour symbols and therefore provides the laptop user with easy access to all key office functionalities. Just one click on the appropriate icon will set up a connection to Microsoft Outlook, for example, or to the Internet. Technical processes like authentication, network login and activation of security mechanisms – for instance when accessing corporate networks – run ‘automatically’ in the background.

The *Communication Centre Software* also offers advantages for the IT administrator. The functions of the Communication Centre can be administered via an expert installation mode. Thus a company’s IT administrator can once centrally record the settings for all employees in the *Communication Centre Software* and directly integrate, for example, specific company applications and VPN clients in the software. The administrator can then distribute this version of the Communication Centre, which is specially customized to the needs of the company, to employees as an installation package.

The intention with this document is to describe how to customize and configure the *Communication Centre Software* to comply with individual requirements as subject to company guidelines.

1 Pre-Configuration

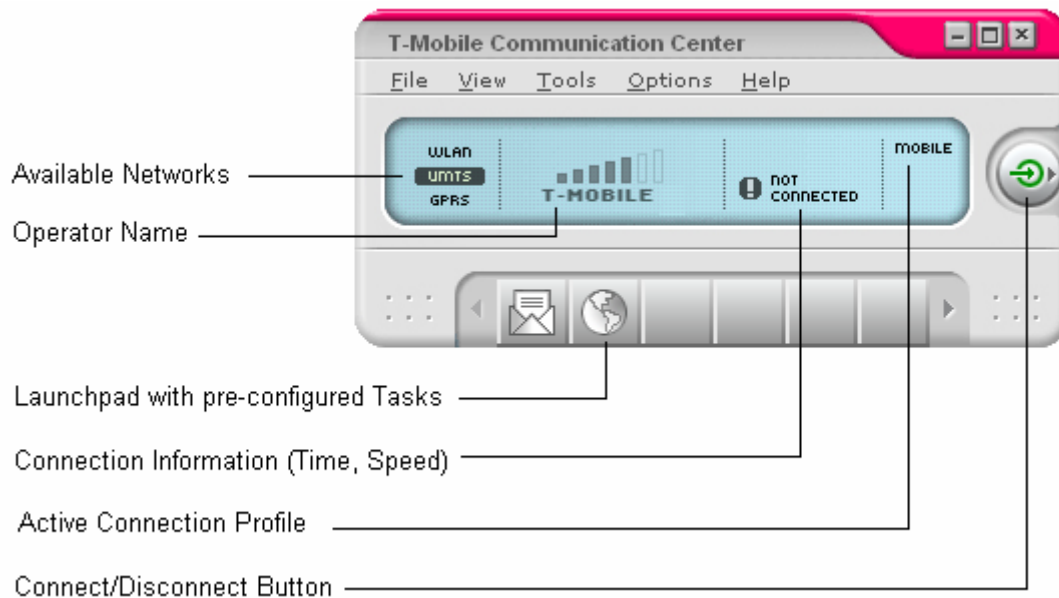
After the *Communication Centre Software* is installed on your laptop, it will **automatically detect** default device and assign them to any of the supported bearers (UMTS, GPRS, WLAN, LAN). If the device scan could not uniquely identify the default devices, you will be prompted to configure a default devices upon first start up. This is necessary for you to be able to establish a connection via any of the bearers.



The *Communication Centre Software* supports an automatic device detection to make it easy to use for you. Nevertheless, if you want to use another device you can choose them manually or you need to install the device drivers accordingly as described in the *Getting Started Guide*.

You may also assign additional default devices manually. Highlight the bearer that you want to assign a default device and click on the **Select...** button. You are able to change the default devices anytime by accessing the **Device Manager** within the **Options | Preferences** menu.

Communication Centre Software will be installed providing a basic configuration, enabling ready-to-go Internet connectivity using T-Mobile network services. The profile “**Mobile**” is set as Active Profile. This profile contains all preconfigured ready to go Internet connections. All **Tasks** and the **Connect/Disconnect** button will automatically connect to the Internet via the available bearer type with the highest performance.



Communication Centre Software will provide you with two pre-configured tasks. You may start one of these tasks from the Launchpad area, by clicking the respective button. Further buttons can be configured with specific tasks.

- Upon clicking the preconfigured **e-mail** task button an Internet connection will be established and afterwards the standard e-mail client on your laptop will be started.
- Upon clicking the preconfigured **Internet** task button an Internet connection will be established and afterwards the standard Internet browser on your laptop will be launched.

It is also possible to connect with any pre-configured connection manually by using the context menu of the Connect button. Click on the small triangle of the Connect button to choose among available connections out of the Active Profile. Select one connection entry to click on, and *Communication Centre* tries to establish a communication channel with that network.



When a connection is active, the Connect button turns into a **Disconnect** button. You may terminate a connection by clicking the red highlighted **Disconnect** button.



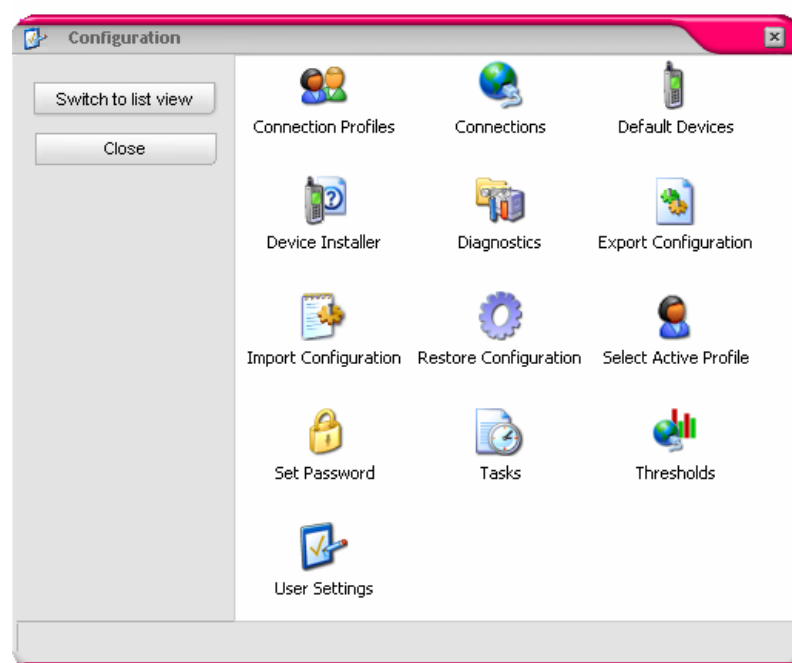
With this basic configuration you don't need to have any knowledge about specific settings in order to get going with the software. All what will remain for you to do is to install and select a default device for the different bearer types you want to use.

Of course, you may also create your own customised configuration based on your specific needs and maybe distribute it to other users. This feature is very helpful for any company using particular networks, i.e. a certain configuration could then be distributed to a number of users.

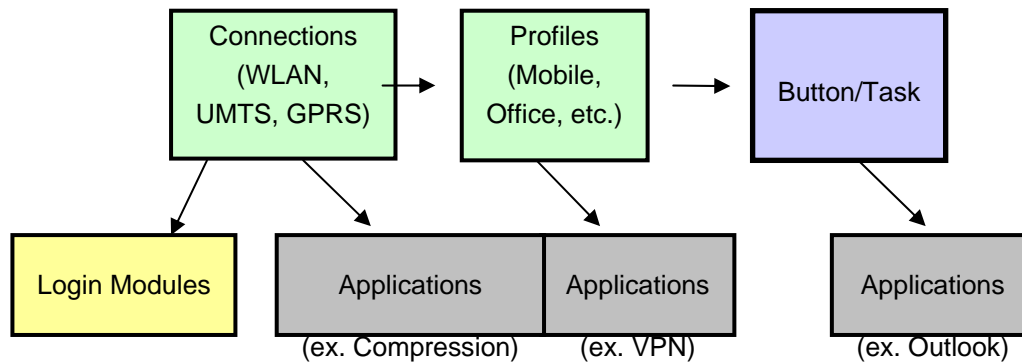
How to create your own connections and profiles and when to use the distribution of settings will be explained in detail later on in this manual.

2 Configuration

This section is dedicated to advanced users they want to benefit from maximum customization of network configuration and other advanced settings. Other users than advanced users please ask your administrator for any configuration to be imported into the *Communication Centre Software*.



The *Communication Centre*'s functionality is based on the methodology of Connections, Profiles and Tasks. Any Connection can be configured according to the specific settings for WLAN, UMTS and GPRS. A Profile consists of one-to-many Connections. In a Profile the user can decide which connections to be considered and in what priority they shall be used.

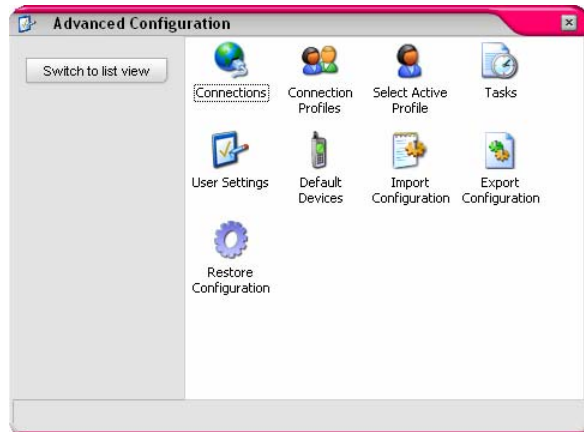


Upon a profile, a Task can be added to the Launchpad. Each Task results in a button in the Launchpad. Tasks can be defined to use a particular profile or take the activate profile. In a simple manner, a task might just start an application without connectivity.

Enter the Configuration by clicking the Options menu and then Configuration.

Connections define general network connectivity settings like IP, Proxy, PPP and Security. In addition, it is possible to define Windows applications that will be launched once a connection was successfully established.

Connection Profiles contains one or several different connections in a priority list. The user sets the priority in which *Communication Centre* will connect using these connections. Furthermore, it is possible to launch Windows applications on a profile level, no matter which connection was established. Application launched from here will be launched when connecting with any out of the connections defined in the profile.



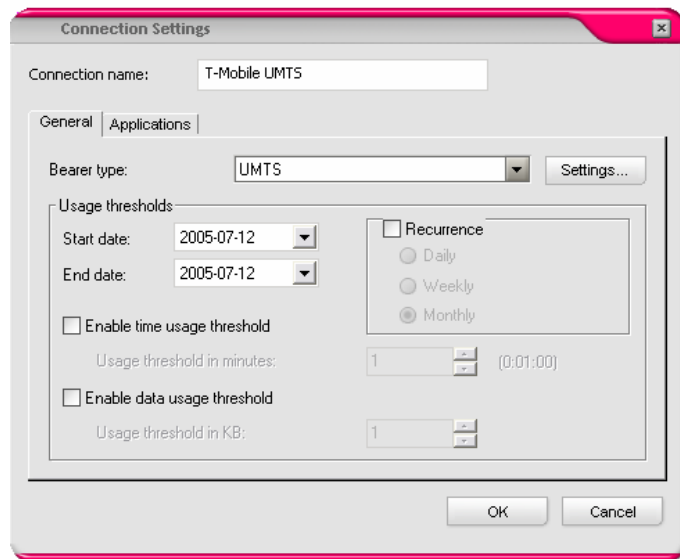
The **Select Active Profile** is the user's choice of preferred profile. It is useful to have different profiles for example one for the office, one profile for travelling and one for being at home.

Tasks are for configuring buttons in the Launchpad. With a task it is possible to connect with a profile and to launch applications. These tasks will be set up as buttons in the Launchpad (except for the 'Default Connection') and they do not have to be associated with a specific connection. Tasks are launched from the Launchpad in the *Communication Centre*.

2.1 Connections

Clicking the connections tab allows the user to see all existing connections sorted per bearer. The user can add or delete connections, and even edit the properties of an existing connection.

When adding a new connection the user needs to enter a connection name. The connection name will be the alias name used to configure profiles or just to connect to this network.



Now the user has to set the bearer type among the available bearers (UMTS, WLAN, LAN and GPRS). Click on the button **Settings** to set the bearer specific parameters depending on the selected bearer type. The bearer specific parameters are defined in the Connection settings on page 15.

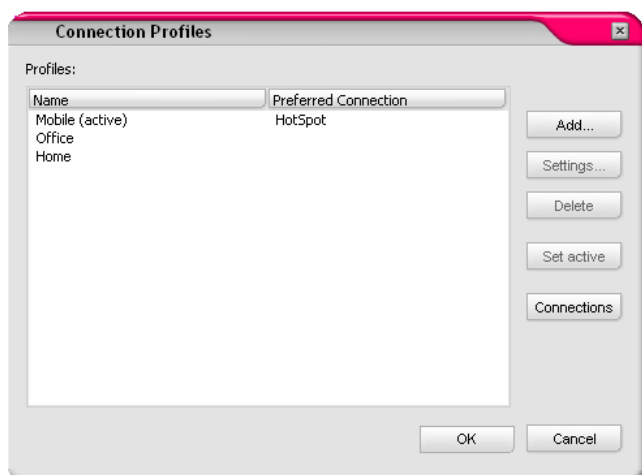
Using the **Usage thresholds** option makes it possible to limit the usage either by time being online or amount of data sent/received over that connection. The time and volume limit can be measured between a given time period and recurrence, i.e. in accordance with the start date of your billing period (you can find this information on your monthly phone bill).

The **Applications** tab contains configurations of applications to be launched after a connection was set up successfully. See page 24 on how to create a new application to be launched.

2.2 Connection Profiles

Here it is possible to add different profiles. Different profiles are useful if the user knows that he has access to different bearers under specific circumstances. For example at home, while travelling or in the office. Click the **Connections** button to create connections of any bearer.

In the **Settings** the user can select which connections he wants the *Communication Centre* to check for connectivity possibilities. Under **Selected Connections** it is possible to



decide the priority of the connection types. For example, if it is preferred to connect to WLAN first and then UMTS. You can change the priority by the move **Up** and **Down** buttons. The **Connections** button to the right enables a quick switch to the Connection settings.

In the **Applications** tab it is possible to set applications to launch after the preferred connections is established. This is called global application(s) launch. To see how to configure an application launch see page 24.

2.3 Select Active Profile

With the Communication Centre the user can define various useful profiles which will be used in individual situations, i.e. while being abroad or just somewhere on the road, being at home or in the office. After finishing the installation, there are three profiles pre-configured that can be used with the *Communication Centre*. The user can set one of these profiles as the active one. By doing this, you can define which profile that is used by the *Communication Centre* to establish a connection.

By default, the profile “Mobile” is set to be the active profile. Selecting another profile out of the list view and then clicking on the button “Set Active” will activate the latest chosen profile.

2.4 Tasks

Under this menu the user can configure Tasks. A task can consist several actions linked to a button in the *Communication Centre* Launchpad (see figure).



In most cases the task will also be linked to a Connection Profile. To configure a Task, you have to define:

1. Name: This name will appear in the launch pad area if the view text labels is selected as well as the launch pad.
2. Icon: Select an icon from the list proposed for the button.
3. Tooltip: Optionally you may create a tooltip text which will be shown when the mouse pointer is positioned over the task button.
4. Connection Profile: Select if the task shall be associated with a connection profile.

5. **Launch Application:** It is possible to configure one or more applications to be launched automatically from the button. Depending on what type of application the user selects different settings may be available. For specific settings, please refer to the documentation for each application. In many cases the settings will be dependent on the configuration of the network and servers. See Launch application on page 24.

2.5 User Settings

Behind this icon, the user will find some general settings that can be configured. In specific, four type of settings can be defined by the user:

- **General:**
 - **Auto start:** The software will be launched at system boot.
 - **Prompt me for Plug and Play devices:** The user will be prompted whenever a new plug and play device is installed/inserted.
 - **Auto scan for networks in active profile:** Will scan automatically for networks at specified intervals.
- **Connect:**
 - **Automatically connect on application startup:** The *Communication Centre* will connect automatically when application is launched.
 - **User Confirmed disconnect/reconnect:** The user can defined when the *Communication Centre* will retry to connect. This will let the user decide how to handle disconnects/reconnects.
 - **Automatically reconnect on lost connection:** If the configured connections breaks without user intervention (no disconnect from the user), then the *Communication Centre* tries to re-establish the connection. The user has the choice between fully automatic reconnect or user confirmation. Additionally, there are parameters like interval and maximum re-connect tries.
- **WLAN:**
 - **Auto scan for wireless networks:** Will invoke the WLAN sniffer at specified intervals.
 - **Popup dialog when networks are found:** When the WLAN sniffer has detected a new wireless network the user will be prompted and have the possibility to log on to this network. To do a success fully

login the correct credentials has to be used. Furthermore, the WLAN tab pane contains a configurable time interval to scan for wireless networks out in the air.

- **Window:**
 - **Always on top:** Will set the *Communication Centre* to always stay on top. All other windows will be the background.
 - **Startup window size:** Set the start up mode of the software between “expanded”, “toolbar” or “tray icon”.

2.6 Default Devices

This menu gives the option to specify the default devices that will be used for connectivity. For each of the supported bearer types UMTS, GPRS, WLAN and LAN the user might define a device that is used to establish a connection. To select a default device, choose from the list of devices that are already installed on the system.

From this dialog the user may also reach the ‘**Install New Device...**’ dialog by a click on that button. Clicking the ‘**Install New Device...**’ button, a dialog comes up that guides the user through the installation of device drivers for supported mobile terminals and PC cards. Read more on how to install a new device in the *Getting Started Guide*.

2.7 Import

It is possible to import configuration settings to the *Communication Centre Software*. You can do that from **Import** under the **File** menu. This can be useful for restoring default settings, or when new configurations are distributed to users.

2.8 Export

It is possible to export configuration settings from the *Communication Centre*. You can do that from **Export** under the **File** menu. This is useful for creating and distributing settings to other users. You can save the configuration to a file, a configuration file, which contains all modified settings made for the software. Choose between **Full configuration settings export** and **Task only export**, click **OK** and choose the name of the file. The *Communication Centre Software* will create an XML file that stores the configuration. This file can be copied to a different Laptop and there being imported into the *Communication Centre Software*. Straight after a configuration import, the *Communication Centre Software* on that Laptop will use the newly imported configuration and settings.

2.9 Restore Configuration

Restore Configuration may be used if you want to set the *Communication Centre Software* back to the configuration that was pre-configured directly after installation.

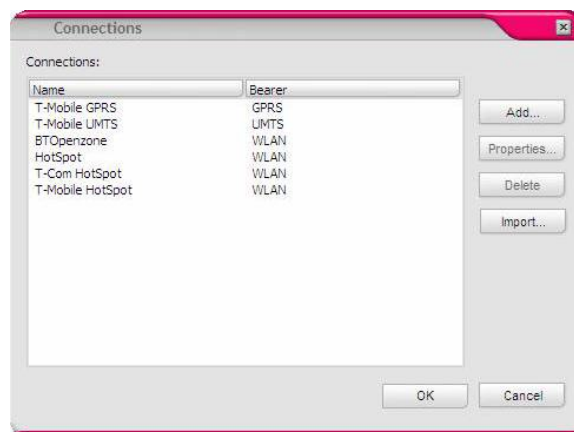
When clicking **Restore Configuration**, the *Communication Centre Software* will import the configurations from the config_default.xml and config_default.encrypt files. These files contain all initial settings and activate them.

3 Connections

You can reach the connections which are available and managed by *Communication Centre Software* via the **Configuration** entry within the **Options** menu. Within the **Configuration** window click **Connections** to open the Connections window. The Connections window will open and lists all connections that are available within the *Communication Centre Software*. For security reasons these connections will only be available in Microsoft Windows RAS when a connection is established.

In the **Connections** window you can:

- add new connections (Add)
- configure connections (Properties)
- delete connections (Delete)
- import connections (Import...).



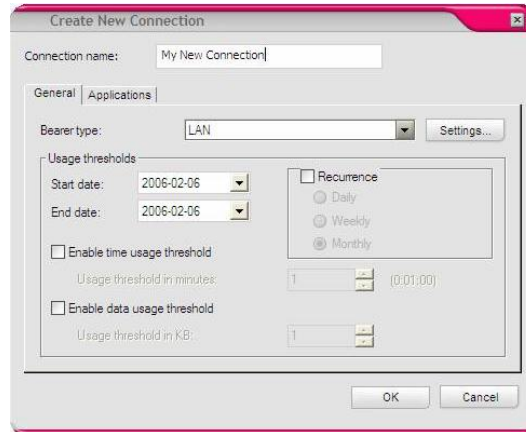
3.1 Pre-configured ones

Communication Centre provides you with 6 pre-configured connections, ready to go for Internet Access, using T-Mobile's UMTS/GPRS and WLAN HotSpot networks:

- T-Mobile UMTS (default T-Mobile UMTS Internet connection)
- T-Mobile GPRS (default T-Mobile GPRS Internet connection)
- HotSpot (one of three the default public WLAN connections)
- T-Com HotSpot (one of three the public WLAN connections)
- T-Mobile HotSpot (one of three the default public WLAN connections)
- BT Openzone (WLAN Roaming Partner of T-Mobile)

3.2 Create New Connections

You can add new connections to the *Communication Centre* Software by clicking on the **Add** button, which opens the Create New Connection window.



To add a new connection you have to follow the steps described below.

1. Define a name for the new connection within the entry field **Connection name**
2. In the **General** tab select a **Bearer type** for the new connection. Following bearer types are supported by Communication Centre:
LAN, WLAN, GPRS, and UMTS.
3. Optionally, you have the possibility to set usage thresholds on a recurrent basis for the new connection within the **General** tab. You can choose between time based (in minute steps) or amount of transferred data (in Kilo Byte steps) based thresholds. By default the usage thresholds are setup for a monthly basis but you can select the period of the thresholds to be taken in consideration by the system by ticking the recurrence box and choosing between Daily, Weekly or Monthly basis. In case one of the thresholds has been reached you will get a message and can decide whether you further want to use this connection for the actual period considered (by default the month). For the upcoming new period (by default the next month) the threshold counter will be reset automatically and you can start to use your connection again.
4. Configure the settings for your selected bearer type for the new connection by clicking on the **Settings** button. You can find a detailed guide about bearer specific settings later in this Chapter.
5. Optionally, you can choose to use an application for your new connection by clicking the **Applications** tab. This application will be launched automatically after the connection was established successfully. Possible applications to be launched after connection are:
Internet browser, Email client, Speedmanager client, VPN client and any

executable Custom application. You can find a detailed guide about application specific settings later in this Chapter.

6. Click the **OK** button in the lower right corner of the **Create New Connection** window and the connection is ready to be used within Communication Centre.

3.3 Configure Connections

You have the possibility to change the settings for any available connection within Communication Centre. To change the settings for an existing connection you must select the connection from the list and then press the **Properties** button. The **Connection Settings** window will open, where you can configure any setting of the selected connection.



Important Note

You should be very careful, when you want to configure the settings of one of the preconfigured default connections. Changes you make will immediately apply and might stop the proper operation of your Internet Connections.

In case your default Internet Connection does not work any more after you have made some changes to the connection settings, you have the possibility to restore the default setting by clicking on the **Restore Configuration** entry within the **Options** menu.

3.4 Delete Connections

You have the possibility to delete any connection from the Communication Centre. To delete an existing connection you must select the connection from the list and then press the **Delete** button. The selected connection will be deleted and is no longer available within Communication Centre.



Important Note

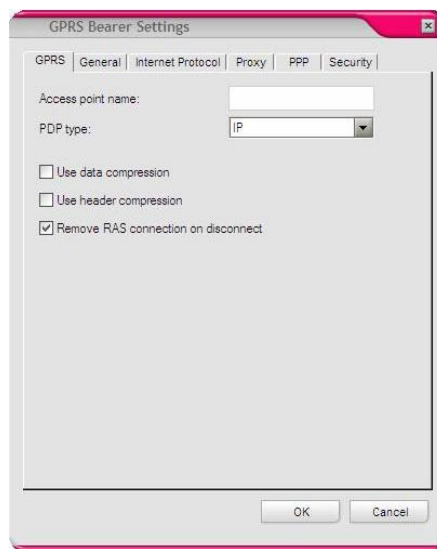
You should be very careful, when you want to delete one of the preconfigured default connections. Changes you make will immediately apply and might stop the proper operation of your Internet Connections.

In case you have done a deletion by mistake, you have the possibility to restore the preconfigured connections by clicking on the **Restore Configuration** entry within the **Options** menu.

3.5 UMTS/GPRS Specific Settings

In case you have selected UMTS or GPRS as bearer type for your connection following settings are specific:

1. You have to provide an **Access point name** within the text entry field in the **GPRS** or respective **UMTS** tab. The shown picture illustrates the specific settings for the GPRS bearer. All pre-configured GPRS Connections in TMCC use APN names and settings related to T-Mobile Networks, allowing a ready to go Internet connection. In case you want to use a specific Company Connection (e.g. from your Mobile IP-VPN), please refer to your IT-administrator for detailed information regarding the APN.



2. You must select the **PDP type**, default is **IP**. You also may select **PPP** from the drop down box. The actual **PDP type** which you have to select for your connection depends on the terminal and the network. Currently, most terminals and networks support the IP only.
3. Optionally, you may choose to use compression for data and/or IP packet headers for this connection.
4. Optionally, you may tick the check box **Show modem lights** in the **General** tab. In case you have ticked this check box a connection icon in the windows system tray will indicate that the connection has been established.
5. Optionally, you may tick the check box **Disconnect after x idle minutes**. In case you have ticked this check box, you may define an idle time limit, after that the connection will be disconnected automatically.



Important Note

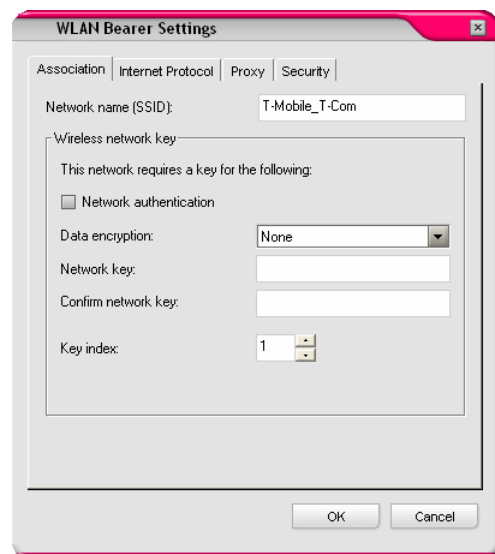
You should be very careful, when you want to change these settings for the preconfigured connections. Changes you make will immediately apply and might stop the proper operation of your Internet Connections.

In case you have done a deletion by mistake, you have the possibility to restore the preconfigured connections by clicking on the **Restore Configuration** entry within the **Options** menu.

3.6 WLAN Specific Settings

In case you have selected WLAN as bearer type for your connection following settings are specific:

1. You must specify the **Network name** (SSID), within the text field next to this label in the Association tab. It might already be possible to connect to that SSID if no encryption and authentication is used. Just press **OK** in that case. The SSID 'any' will apply to any actual broadcasted SSID and connects you automatically to the Access Point with best signal strength. In case you specified a SSID other than 'any', you would only be connected to an Access Point broadcasting this specific SSID.



1. Optionally you may use network authentication for a wireless LAN connection by activating the **Network authentication** option in the **Association** tab. In case you have activated network authentication you must select the data encryption algorithm. Currently WEP and WPA encryption are supported. WEP (Wired Equivalent Privacy) is designed to provide security by encrypting the data that is transmitted from Access Point to your WLAN device. Whereas WPA (Wi-Fi Protected Access) is a combination of an existing authentication framework, encryption and message integrity check. WPA will most likely be used in medium and large organizations with their existing RADIUS servers.
2. In addition you may define security settings for a wireless LAN connection by clicking the **Security** tab. In the Security tab you may choose a **Login module** to access the service of a wireless internet service provider (WISP). *Communication Centre Software* currently supports the login module 'HotSpot' that you can use in a T-Mobile or T-Com HotSpot.
3. In the **Security** tab you may also enable IEEE 802.1x authentication for this connection. In that case, your IT-administrator or the WISP will provide you with necessary details regarding EAP type and authentication method.

3.7 LAN Specific Settings

By default, the LAN adapter on a laptop is activated and a connection entry in the dialup network is configured by MS Windows. In *Communication Centre Software*, there are no specific settings for LAN connections configurable. Instead, click with the right mouse button on the LAN adapter (via control panel | dialup network) to show and edit the properties.

3.8 Settings Common to all Bearer Types

3.8.1 Internet Protocol

This tab contains parameter inputs related to the Internet Protocol (IP features). Only a brief description is given here; please refer to the Windows Networking & RAS documentation or the **IP** and/or **PPP** protocol specifications for further details about the corresponding input fields.

Two areas of this tab permit the definition of **IP address** and **DNS server address**. The latter one is a server on the Internet that maps URLs (web addresses) to IP addresses, so that the traffic reaches the correct host, etc.

The first area provides radio buttons to toggle between obtaining the IP address automatically or use a specific IP address. When choosing **Use the following IP address**, the IP address has to be entered in the corresponding text field. If it is set to **Automatic**, no more info is requested.

The second area uses radio buttons to define DNS server address attribution as Automatic or use a specific DNS server address. When choosing **Use the following DNS server address** the user needs to enter the address of the DNS server. Preferred address field is mandatory, Alternate address field is optional. If it is set to **Automatic**, no more info is requested.

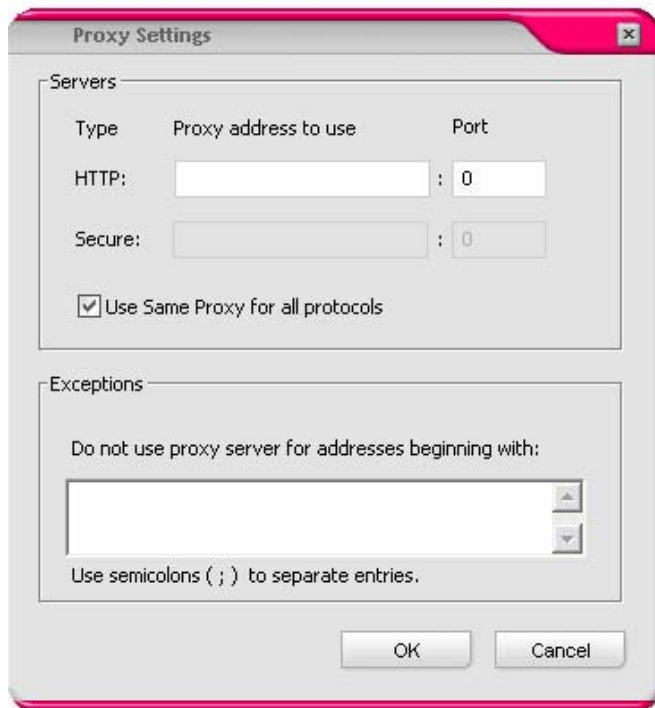
3.8.2 Proxy

By selecting the **Use automatic configuration** script check box within the Web tab, it is possible to automatically configure the proxy server settings. The user must enter an URL that links to a server containing a PAC configuration script. This is useful in some corporate remote access scenarios.

If a **proxy server** is used for the Internet communication, the user has to tick the **Use a proxy server** checkbox and enter the URL or IP address of the proxy server in the Address field. A preferred port number can be entered in the Port field.

If the **Bypass proxy server for local address** field is ticked then this assures that the proxy server does not handle internal addresses.

The user can also specify what are the exceptions for the use of the proxy server (see figure).



3.8.3 PPP

This tab contains input fields related to the **PPP** features of the connection; see the Windows RAS documentation for further details. These options are depending on ISP server details and therefore must be configured with the same parameters.

- Selecting **Active LCP extensions** enables the RAS to use extended Link Control Protocol.
- Selecting **Active software compression** enables the sending of compressed IP packets.
- Selecting **Active header compression** enables the sending of compressed header packets.
- Selecting **Client for MS network** activates the Microsoft Network client (using NetBIOS and related protocols) over the connection. This may be useful in certain LAN access scenarios.
- Selecting **File and printer sharing** for MS network enables the use of remote share and/or print on a remote Microsoft Network over the connection. This may be useful in certain LAN access scenarios.

3.8.4 Security

The user can choose between common credentials-based authentication protocols: **PAP**, **CHAP** and **MS CHAP**, depending on the ISP or corporate network policy. These are different protocols for communicating username and password and if the wrong protocol is used the logon will fail.

The **Username** and **Password** fields are used to enter the authentication credentials to use at connection time. For security reasons, they are encrypted when saved.

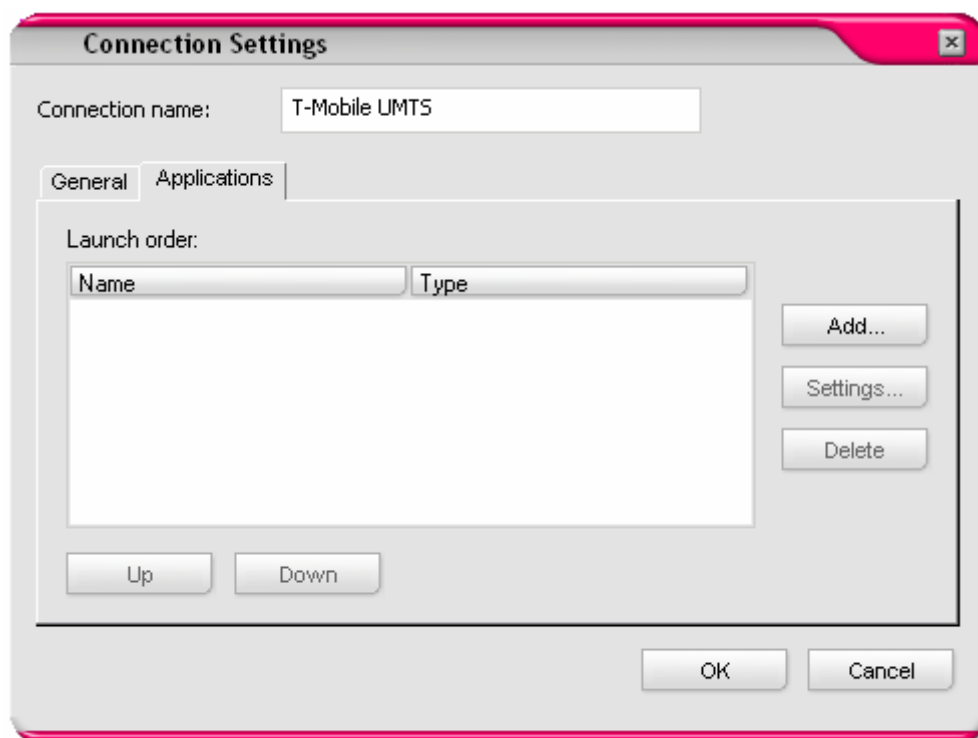
To access public WLAN networks, a **Login module** may be used to support automatic login procedures. The login module “HotSpot” may be used for HotSpots provided by T-Mobile, T-Com and roaming partners. Additional login modules might be added by a software update to support a broader range of public WLAN networks.

4 Launch of Applications

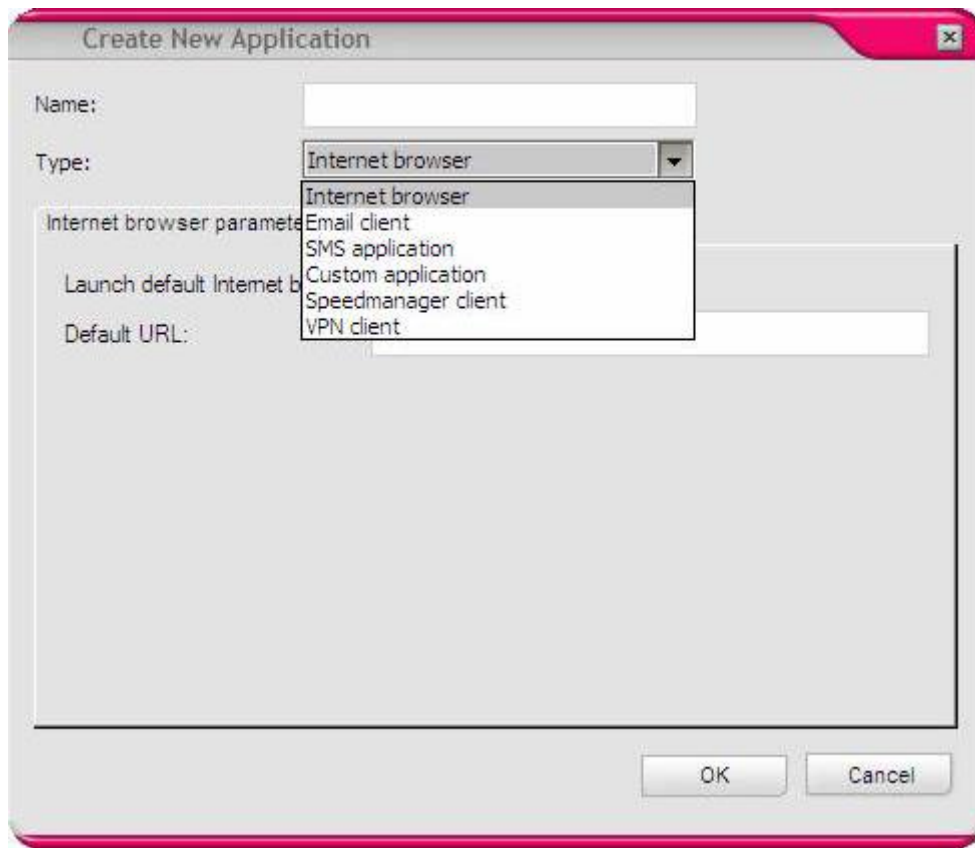
With *Communication Centre Software* you are able to define a set of 3rd party applications that shall be launched after a connection was established. By doing this, you will have i.e. the e-mail client upon a UMTS connection up and running with only one click on an application button (resides in the Launchpad). You could even launch a set applications upon different events.

Quick Guide to configure an application to be launched

1. Click on the menu **Options | Configuration**. Then go into the **Connections** details and select the connection of your choice. Next click on **Properties** and select **Applications** to get the Connection Settings dialog.



2. Within that dialog you should click on **Add** to define any other application that you would like to be launched after connection was established. It is possible to launch any kind of application, but some application types - supported in a more convenient way - are pre-configured and selectable



4.1 Internet Browser

Use this type of application to start an Internet browser upon connecting. It is possible to set a default address in the **Default URL** field that the browser shall start with.

4.2 Email Client

A launch of the default e-mail client starts the e-mail client that is set to be the default one via Microsoft Windows OS. Use this type of application to launch your e-mail client after having established an internet connection.

4.3 Custom Application

This type of application is used to start any application. Just set the **Application path** to the .exe file of the application and this application will be launched after a connection was established. In the **Application parameters** field you may put in any extra parameters needed for the application to suite your individual needs.

The option for **Stop at disconnect** may be used for applications that can be closed by command line parameters. There you have to define the application path and parameters again. It is not possible to exit a program just by defining the application path, but you could start an application at disconnect of course.

4.4 VPN Client

If you want to launch a VPN client with *Communication Centre Software*, you will have to define it either as a custom application or – in case of Cisco Systems VPN Client – use the **VPN client** application type. In the latter case *Communication Centre* handles the tasks to establish and terminate a VPN tunnel.

The configuration of **VPN clients** is not part of this manual. If you want to use a VPN client together with the *Communication Centre Software*, you must define a VPN profile with server settings, certificates, algorithms, etc. in the VPN client. Please make sure that you have the correct configuration to fit the VPN-gateway settings to connect to your corporate network.



Important Note

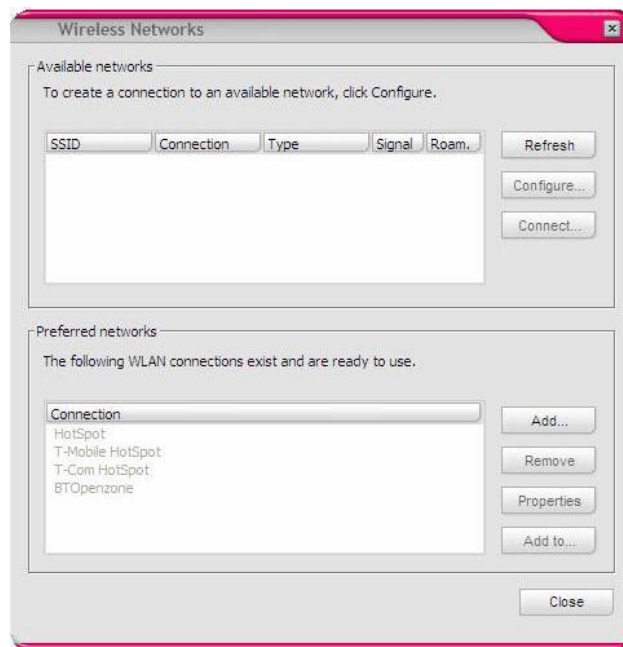
Communication Centre Software supports VPN clients related to starting the client and to establish or terminate a VPN tunnel with a given VPN profile name and user credentials.

The **status** of an established VPN tunnel is not monitored by the *Communication Centre Software*. You **must** use the VPN clients user interface to monitor the tunnel status.

Communication Centre Software does not keep track of the tunnel status and will **not warn** you if the tunnel was terminated for whatever reason.

5 Tools and further Features

5.1 WLAN Sniffer



The WLAN Sniffer is used to scan the local area for available networks. Any wireless network found will be listed by SSID, connection, type and signal strength. From this list it is possible to select a wireless network and directly **Connect** to.

Click on **Configure** to define this wireless network as one of your preferred connections into the list of Connections. Once you have configured a connection, this connection will be listed in the "Preferred networks" list view.

With the **Refresh** button you are able to update the list of available wireless networks that are currently up in the air.



5.2 HotSpot Locator

The *Communication Centre Software* contains a tool that you will use while travelling and looking out for the nearest available HotSpot. The *HotSpot Locator* is a client with a small footprint database containing detailed information of available HotSpots, i.e. location details, type of category, the opening hours.

With the *HotSpot Locator* you can search for Hotspots in any country where public HotSpots are operated by T-Mobile and T-Com i.e. in locations like hotels, coffee bars, airports and other business lounges.

You are able to launch the HotSpot Locator by clicking on the **Tools | HotSpot** menu and then click on **HotSpot Locator**. Afterwards the Locator dialog will come up with the start screen that displays quick search criteria to look out for available HotSpots.

In the Quick Search view you are able to define a country, the city together with a category like Café, Hotel, Airport and furthermore a perimeter of 2, 5, 10 or 20km by which the search shall be narrowed by.

If you click on the **Search** button, a dialog will come up to present the search results with all relevant information of the found HotSpots.

HotSpot Locator

File Search Tools Help

T-Mobile

Quick Search Expert Search

1 Select Country
United Kingdom

2 Select City
London Heathrow
Aberdeen
Bath
Birmingham
Brighton

3 Select HotSpot Location
All

4 Select Location near by
None
Select maximum distance to HotSpot
☒ 2 km ☐ 5 km ☐ 10 km ☐ 20 km

United Kingdom

Hotspot - Surf the Internet with high-speed wireless connection.
With HotSpot, you can surf the Internet or access your company intranet easily, reliably and without wires, all at very high-speed data transmission rates.

Search

HotSpot Locator

5.3 SMS Center

The *Communication Centre* is equipped with an SMS application. To start to use the SMS application, click the **Tools** menu and choose **SMS Center**. From the SMS Center you can send and receive messages as well as Import/Export/Edit contacts between *Communication Centre* and the SIM-card.

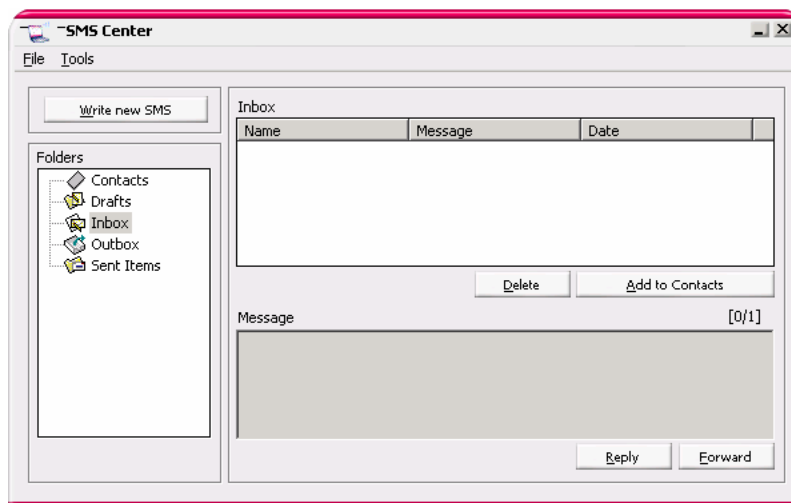


Important Note

To send and receive SMS's, the PC has to be attached to the UMTS/ GSM network. If the PC is connected most devices cannot send or receive SMS. If the Operator name and Signal Strength is indicated in the *Communication Centre* and if the **Status Display** says, "not connected", the PC is attached.

If the **Status Display** says "connected" the PC is connected and most devices will not be able to send/ receive SMS.

SMS sent when connected will be saved in the outbox folder and automatically sent, the next time you are attached to UMTS and GPRS.



The **File** menu lets you import/export contacts and the **Tools** menu lets you edit settings for the SMS application. Normally, the SMS application reads all needed parameters from the SIM card. It is therefore advised, not to change any settings unless there is a clear reason for doing so.

SMS Quick Guide

To create and send a new SMS:

1. Click the **Write new SMS** button.
2. Write the message in the **Message** field
3. Type in the phone number of the receiver (one or multiple) of the message, in the **Phone Number** field or double-click the receiver in the Contacts list field.
4. Click the **Send** button.
5. The message is stored temporary in the **Outbox** folder and then automatically moved to the **Sent Items** folder.

In order to ensure the ease of use of the SMS application there are separate folders for the:

- **Contacts**

- To Import and Export contacts, choose the **File** menu and then **Import / From SIM card** or **Export / To SIM card**.
- You can edit and delete contacts from the Contacts list by using the related buttons for this located below the Contact List field, **Edit** and **Delete**.
- To add a new contact, click the **New** button located below the **New Contacts** field. The type in the name and phone number in the **New Contact** field and click **Save**.

- **Drafts**

- When creating a new a message by clicking the **Write New SMS** button it is possible to click the **Save** button below the 'Message' window, the message will then be stored in the Drafts folder.
- You can at any time delete messages stored in the Drafts folder by highlighting the message to be deleted by clicking **Delete**
- To send a message from the Drafts folder, simply highlight the message in the 'Drafts list' and click the **Edit** button below the 'Message' window. The same screen as seen when clicking 'Write New SMS' will be viewed, click send to send the SMS. Alternatively, double-click any message from the Drafts list to be displayed on screen.

- **Inbox**

The Inbox folder contains all received messages.

- Delete a message from the Inbox by highlighting the message and click the **Delete** button.
- Click the **Add to Contacts** button to add the phone number and name of the sender of the received message, to the Contacts folder list.
- You can reply and forward messages by highlighting the message and then click the **Reply** or **Forward**.

- **Outbox**

The Outbox folder temporarily stores sent messages. If of any reason the SMS could not be sent, the message will be stored here until it can be sent.

- To delete a message from the Outbox list, highlight the message and click the **Delete** button.
- To edit a message before it is sent, highlight the message and click the **Edit** button. Then you will be displayed the 'Write New SMS' screen that lets you edit and re-send the message.

• Sent Items

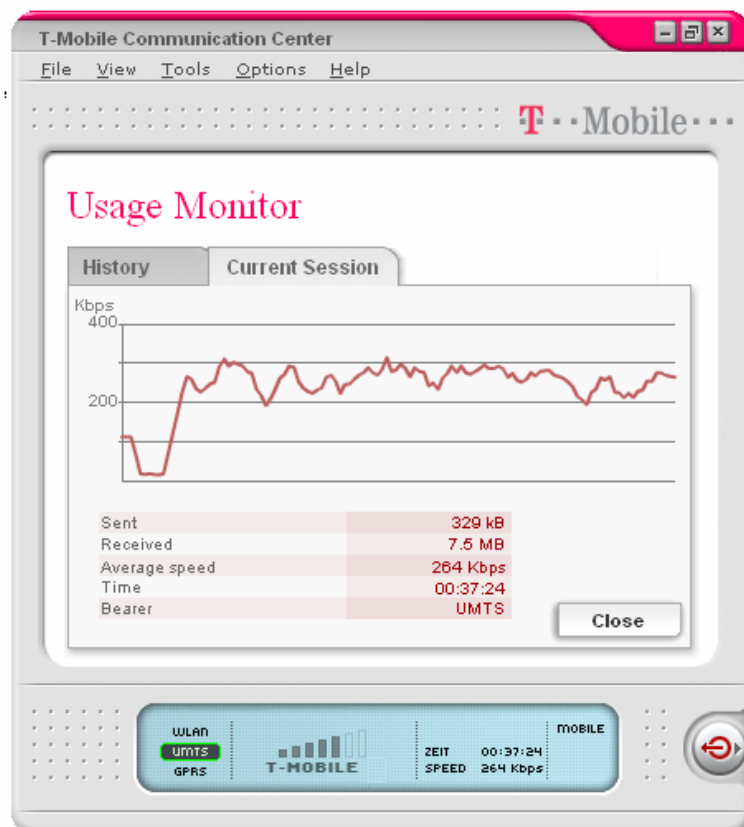
The Sent Items folder stores sent messages until you deletes them.

- To delete a message, highlight the message in the Sent Items list and click the **Delete** button.
- You can also edit a sent message and have it sent again. Simply highlight the message in the Sent Items list and click the **Edit** button. You will then be displayed the 'Write New SMS' screen that lets you edit and re-send the message.

5.4 Usage Monitor

The Usage Monitor is for you to view current and retrieve history information on a connection level. The report of how much data has been transferred on a connection or how much time you have been online might help you to analyse your specific usage behaviour. It will also give you an overview on how much data you transfer per month.

You can switch from data to online-time based view by using the **Time** button on the lower left. Switch back to data view with the **Data** button.



With the top left drop down menu you can select on what data/time out of the pre-configured connections shall be displayed.

In the **Configuration** of *Communication Centre* you will be able to define a volume limit on a connection and limit your own data throughput. Especially when using data volume tariffs this will give you a hint on what volume is used up.

**Important Note**

The data that is displayed in the Usage Monitor is not billing relevant and might differ from the transferred data volume that you will find on the phone bill from your mobile network provider.

The data displayed in the Usage Monitor should be used for trend and personal usage analysis only.

You can choose from different time bases for the report. The options are:

1. Today
2. Actual week
3. Last 7 Days
4. Actual Month
5. Previous Month

As long as you are connected with whatever connection, the Usage Monitor will display only the current connection information. While connected it is not possible to analyze historic information..

5.4.1 Current session

The *Communication Centre Software* displays a continuously scrolling graph showing data rate of the last 50 seconds. The data rate is calculated as the real-time sliding average over 5 seconds for the currently connected Connection. The information is displayed with numbers for current average data rate or the amount of data transferred since the start of the session. Both Uplink and downlink are displayed.

5.4.2 Historical data

The *Communication Centre* displays historical data in a graph showing the selected information. The X-axis represents time in days; the Y-axis represents data volume (the sum of transmitted and received data) in kilobytes or session time in minutes.

Session information belongs to the start day of the session. If there are more than one session for a day the values for the sessions are added.

The user has the option to reset the statistical data counters. If reset is chosen all historical information will be deleted. The data for the current session is not affected.

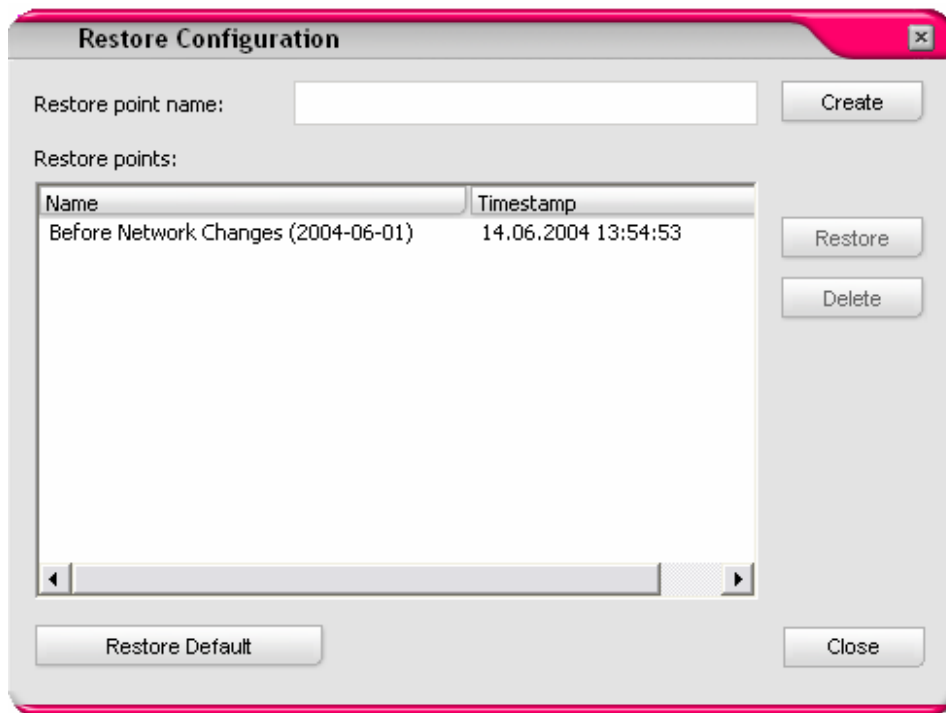
5.5 Set Password

This allows the user or an IT administrator to set and change the password in order to reach the **Configuration**. An option to enable and disable the password lock is also available.



5.6 Restore Configuration

In the Configuration of the *Communication Centre* there is an extended form of **Restore Configuration**. If you choose the menu **Options | Configuration** and then click on **Restore Configuration**, you will get the following dialog:



With that feature it is possible to save a configuration as a restore point. When a new restore point is created, a snapshot of the current settings will be stored so that the configuration can be restored at any time later. It is possible to create several restore points that allows you to go back to some historical settings if you want to.

To import a Restore point into the *Communication Centre*, highlight the Restore point and click **Restore**.

Click **Restore Default** to set the *Communication Centre* back to the configuration that has been pre-configured direct after the installation. The default restore file contains all initial settings.

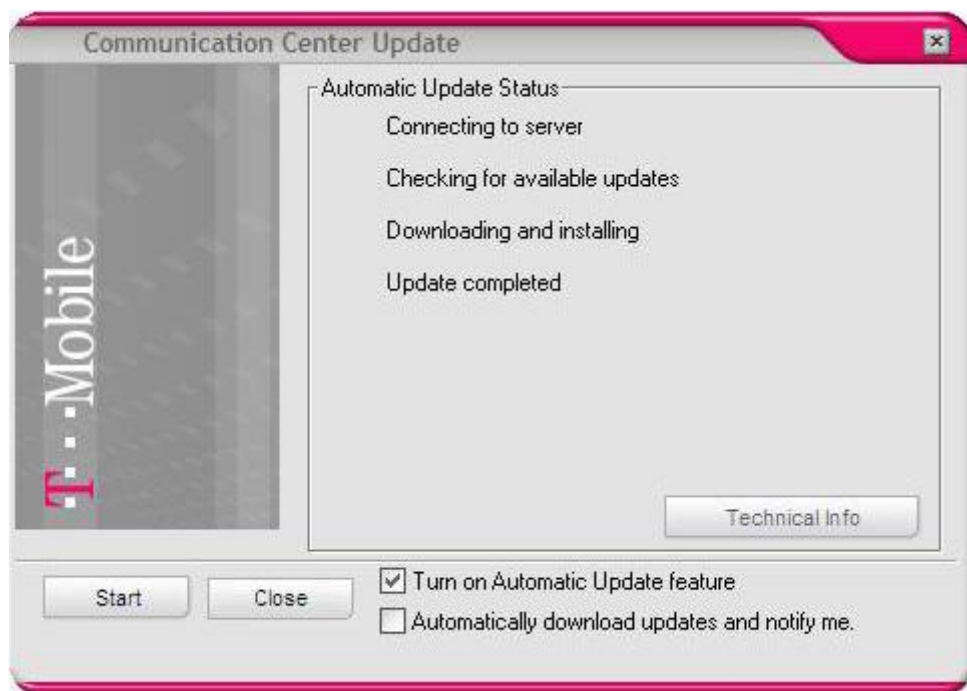
5.7 Software / Firmware Update

During the installation procedure of *Communication Centre* an update agent is installed on the PC. The update agent runs in the background as a separate application.

The automatic update agent runs automatically at start-up of the PC. It is capable of detecting any available new version of *Communication Centre* software, drivers and configuration files and informs you that an update is available.

Periodically, initially set to every 14th day, the update agent connects to a server using FTP over the network connection available from the PC. Every time this is done the update agent checks on the server whether new updates are available or not. If there is you will be prompted whether to download and install the updates or not.

5.7.1 Software Update



When clicking **Automatically download updates and notify me**, all the new files will be silent selected and downloaded. The next time you click “Software Update” the new files can be installed.

If you choose to download and install a set of Updates the following dialog will be shown

You are now able to choose which files to download and install. Some files are probably set to mandatory in the list. These files will not be possible to deselect.

When clicking the **Snooze** button, the Update dialog will disappear and pop-up after the defined time indicated in the **Click Snooze to re-check in** field has elapsed.

When clicking **Select All**, all the new Updates will be selected to download. Click **OK** to download and install the Updates.

When new Updates have been successfully downloaded and installed, a dialog will be displayed to inform you that the Update has been performed.



Important Note

Automatic update agent uses FTP for downloads. It is therefore important that **port 21** is opened in any firewall that this traffic has to pass through. In case of problems with downloads, contact the IT-administrator.

5.7.2 Firmware Update

T-Mobile is constantly improving its network and services in order to offer its customers the best network possible. In this context, T-Mobile has upgraded its UMTS Network to support HSDPA (High-Speed Download Packet Access), the last development in terms of High Speed connections.

To benefit from this high speed technology, an user needs in addition of the present *Communication Centre* to use one of the following new released data cards:

1. Mobile DSL Card* or Mobile Broadband Card*
2. Mobile DSL Card WLAN* or Mobile Broadband Card WLAN*

*: The name of the card may differ depending on your national T-Mobile operator.

The user of the above mentioned data cards will always need the last version of the cards firmware to fully benefit of the High-Speed-3G technology. The *Communication Centre* is detecting automatically which version of firmware is installed for the card used and will prompt when necessary the Firmware Update.

5.8 Flight Mode

The *Communication Centre* includes now an option which enables the flight mode the same it works already with mobile phones.

The flight mode consists in switching off all radio activity of the currently used data card. This is particularly useful when the user is in an area where it is required to switch off all radio activity (plane, hospital...) and doesn't want to take off the card from his laptop.

To enable the flight mode, click on the **Options** menu and select Flight mode.



Important Note

Some data cards don't support the Flight Mode functionality.

The *Communication Centre* will detect if this functionality is supported or not by the data card in use. If Flight Mode is not supported by the data card, the menu item "Flight Mode" will be then greyed out and it won't be possible for the user to select this option.

6 GPRS/UMTS Device Settings

6.1 PIN Management

The *Communication Centre* can be used to change the PIN code on the SIM card that is plugged into the default device. It is also possible to enable and disable the PIN Code security check. Choose **PIN Management** out of the **Options | GPRS/UMTS Devices** menu to define a new PIN code or de-activate the PIN code request.

Once you have configured to use the PIN code security check, each time the device with that SIM card is plugged in, *Communication Centre* will prompt you to type in the PIN code before you can use that SIM card for connectivity.



6.2 Network Selection

The manual network selection allows you to change the network operator that is used to establish a connection. In the same way as it done with any other mobile terminal while being abroad. Normally, the PC card as well as mobile terminals will attach to a preferred network in this case. But for a good reason you might want to switch to another operator that supports roaming with your SIM card.

The *Communication Centre* will list the networks that are available due to roaming agreements between the mobile network operators. For more information on roaming agreements in foreign countries and maps of the networks please contact your mobile operator.

6.3 Frequency Band

With the feature to select the frequency band you are able to set the frequency that is to used by the device. This functionality is device dependent and will only work with data cards or mobile terminals that support different frequency bands. Check your device specification or contact your mobile operator for detailed information.

You will get the **Frequency Band** dialog by clicking on the **Options | GPRS/UMTS Devices** menu.

7 Appendix

7.1 TCP/IP settings

The TCP/IP settings into the Windows Registry of the computer have been modified by the *Communication Centre* during its installation in order to give the user the best and most optimized performance possible for all bearers.

The following registry key was added in order to provide mobile broadband access with best performance:

```
\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\  
Services\Tcpip\Parameters\TcpWindowSize
```

The TcpWindowSize key/value pair is set as follows:

```
TcpWindowSize      REG_DWORD      0x0000800c (32780)
```

If you don't want to adopt these changes, you can delete the TcpWindowSize registry key and you will get back to MS Windows default settings.

7.2 Redistributable

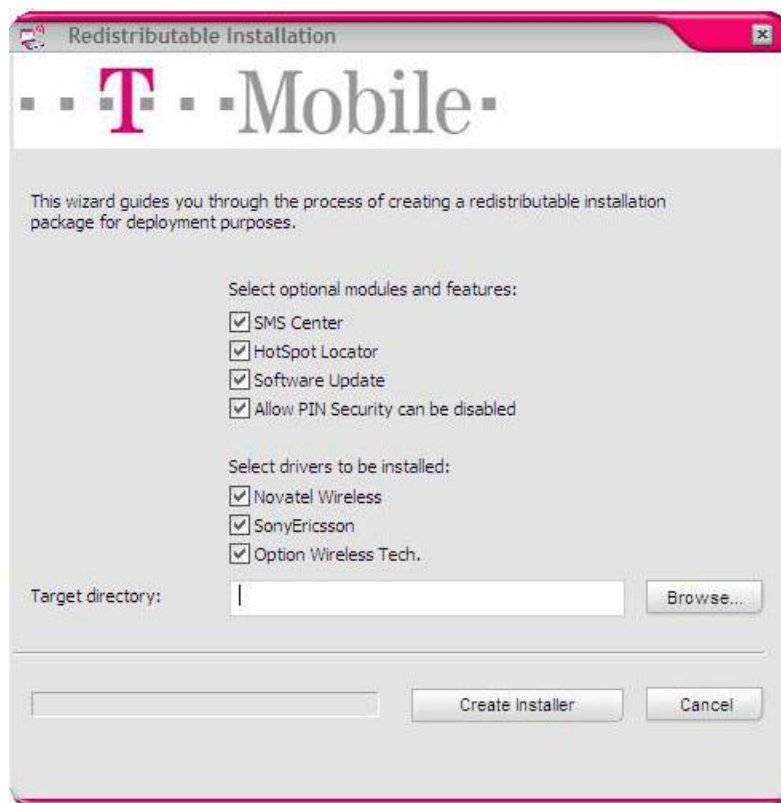
If the user selects the **Deployment** installation type during Installation of the *Communication Centre*, two additional features will be proposed to the IT-administrator.

First of all, during installation, the user will be prompted with an interface allowing him to choose a specific Access Point Name (APN) for the connections.

Second, an additional option will be installed in the **Start Programs** menu and will allow an IT administrator to create a re-distributable installer file with some customized options.

7.2.1 Installation Wizard

To create a re-distributable installer of the Communication Centre, click the Windows 'start' button and locate 'T-Mobile' under the 'programs' tab and select the 'create redistributable installer' program.



The Redistributable installation wizard will allow the user to create setup version with the parameters he has selected.

By default all features, modules and drivers are selected.

If the IT-administrator wants to create an installer without one of the features, modules or data cards drivers, he simply needs to deselect (un tick) the check box in front of the option he doesn't want.

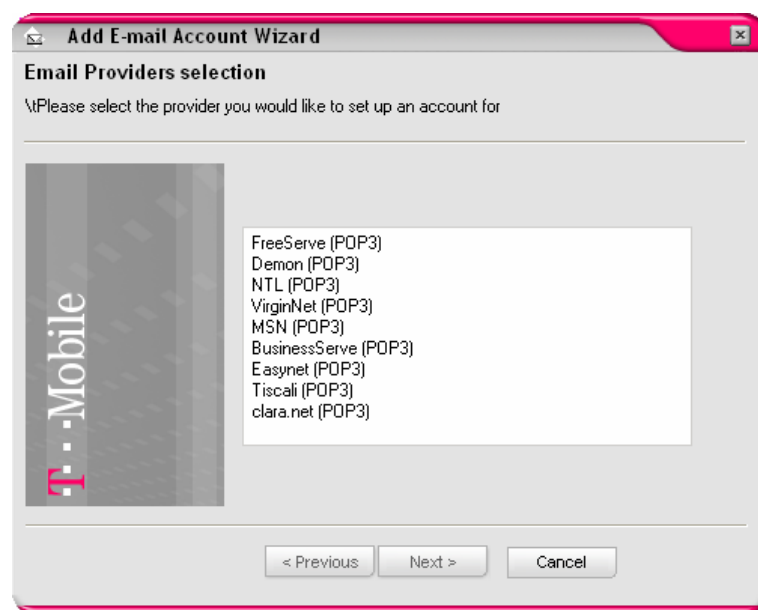
Then it is possible to specify the directory where the setup version with the right parameters will be saved.

Click on Create Installer and the version is automatically create and ready for use and redistribution across all users.

7.3 Email Wizard

The *Communication Centre* includes an e-mail wizard that helps you to configure e-mail accounts on the default e-mail client.

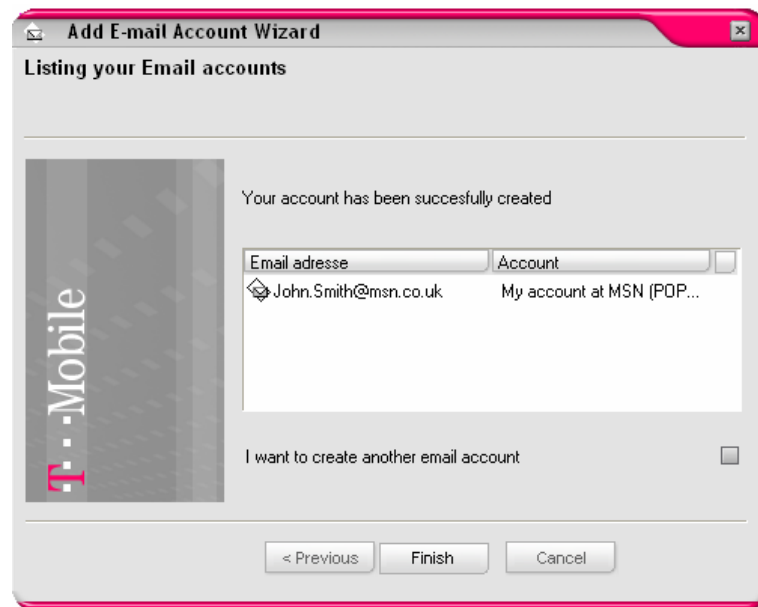
The Email Wizard is started through the Start -> Programs -> T-Mobile shortcut.



The prerequisites are that you have to have a POP3 e-mail account at one of the providers in the list. To create an account, you need to select the type of account from the list of providers and enter the following information:

1. Account Name
2. First Name
3. Last Name
4. e-mail address

Within the same session, you can create another account by ticking “I want to create another e-mail account” and click on Finish otherwise click on Cancel.



When you click on **Finish**, the Email Wizard modifies the default e-mail client settings and adds the account with the user details. To modify the details or remove an account, please refer to the e-mail clients documentation.



Important Note

Your email provider must be in the list for the email wizard to work.

You can check which e-mail client is the default one on the PC from the Control Panel. Simply select Internet options - the programs tab shows a list of programs associated to email.

8 Troubleshooting

8.1 Common Troubleshooting Procedures

- Isolate the problem to one component, layer or stage of the connection process. This will allow a fine-tuning of troubleshooting techniques and tools
- Always determine whether a problem is reproducible or not, i.e. have the user retry, and make sure they get the same error or symptom, at least once.
- Have you ever connected successfully? Has this ever worked? If so, what has changed?
- Always reboot both the PC at least once, before going into deep troubleshooting procedures. This should be repeated, if a major change is made yet the connection still fails.
- Always get the Trace log or exact error message, as well as the environment details. The details required will differ, depending on where the problem lies.

Communication Centre uses a trace file, stored in txt format on the hard disk under Documents and Settings -> <User> -> Application Data. The **logfile.txt** contains install details, and some per session information. The original file is appended to at each new session, and when the file is over 1 Mb, a backup is created (logfile_old.txt) and the file reset.

8.2 Communication Centre Error Messages

Note: Communication Centre may report errors both from its own internal error list as well as via API, e.g. Microsoft Windows RAS generated errors. This document lists **common errors** and troubleshooting suggestions for these.

8.2.1 Error: The AT command is not supported

Cause: This indicates that the subscriber is outside the UMTS/GPRS coverage area, does not have a UMTS/GPRS subscription or that the selected Modem does not support UMTS/GPRS.

Troubleshooting:

- Check the UMTS/GPRS device is connected to the specified port and is powered on. Also check that the device indicates UMTS/GPRS coverage.
- Ensure that the user is actually subscribed to the UMTS/GPRS service, for the SIM in use. (note: this is most likely cause of the error!)

- Ensure that the customer is in an area of UMTS/GPRS coverage. Consult the device manual for details on how to check this.
- Check the correct modem/device driver has been set as the default modem or selected for the profile. If the user has several modems installed, he or she may mistakenly select the wrong modem (e.g. non UMTS/GPRS) for the connection.

Additional Details: All communications between PC and modem required to set up a connection take the form of AT commands. The AT commands are stored in the modem driver (.inf file) and in a configuration file that Communication Centre utilizes. Different modem vendors may support different commands, although in general most vendors will support a common subset of commands depending on the type of modem (e.g. V.90 , ISDN TA ,UMTS/GPRS specific commands etc).

UMTS/GPRS connections also require a specific subset of the AT commands. The error above indicates that the AT commands sent by the application has not been understood by the terminal.

The error could also indicate an error with the modem driver, and the AT command syntax that it uses. The source of the modem driver should be investigated in this case. Please eliminate the above possibilities first though.

8.2.2 Error: Communication port opening has failed: can't open the serial port, The system cannot find the file specified.

Cause: Incorrect or missing COM-port/modem driver chosen.

Troubleshooting:

- Make sure that the modem that the user tries to use really exists as an entry in Windows 'Modem Properties' and that it's connected to the correct COM port.
- Reinstall modem on the correct COM port, and select the correct modem for the connection.

Additional Details: Selected COM port for modem drivers can be checked from the Modem Properties dialog in the Control Panel of Windows.

8.2.3 Error: Communication error when accessing mobile name

Cause: The device is not responding properly to the CGMM/CGMI command (manufacturer and model of the device). TMCC interprets this as a communication error.

Troubleshooting:

- Restart device.
- Upgrade device firmware.

Additional Details: Sometimes it helps to restart the device and try again (may have to do this more than once). If this does not work, the user should upgrade the device with the latest firmware.

8.2.4 Error : Communication error when sending the ATTACH command: failed to read on serial port, Serial time-out has expired

Troubleshooting:

- Restart the device.
- Choose another driver for the connection.
- Upgrade device with the latest software.

8.2.5 UMTS/GPRS – Check the Modem settings in the PC settings control panel to confirm the modem type and properties are correct.

Cause: Usually means that modem type or settings are invalid as seen by the operating system.

Troubleshooting:

- Check that the correct modem is used by the connection.
- Check Modem Properties.
- Uninstall the current modem driver used, and reinstall the correct driver.

8.2.6 **ERROR : 720 - The connection attempt failed because your computer and the remote computer could not agree on PPP control parameters.**

Cause: The device is not able to negotiate PPP parameters. There can be multiple causes of this error message.

Troubleshooting:

- Make sure the customer turns off and on the device before retesting.
- Check the configuration of the connection profile. Check APN, username/password, PPP/IP settings.

8.2.7 **UMTS/GPRS: Disconnected, ERROR_PPP_NO_PROTOCOLS_CONFIGURED**

Cause: The device is not able to negotiate PPP parameters. The APN Name is incorrect. Typical reason: APN is incorrect

Troubleshooting:

- Has a UMTS/GPRS connection ever worked for this customer from this PC, with this device?
- Make sure that you reboot both the PC and the device before testing.
- Check the configuration of the connection. Check APN, username/password, PPP/IP settings.

8.2.8 **ERROR : 718 - Timed out waiting for a valid response from the remote PPP peer.**

Cause: The device is not responding properly or fails to respond to commands sent by the software

Troubleshooting:

- Reset the device and reattempt the connection

8.2.9 Error: Communication error with modem: failed to read on serial port, Serial time-out has expired

Cause: The software is not able to communicate with the device as expected. Typically this is because the COM port is occupied by another software, such as Active Sync, HotSync etc. The error could also be caused by a hardware error on the device attached to the COM port.

Troubleshooting:

- Make sure no third party software is blocking the port. Often it helps just to wait a while, let the communication on the port end. If this does not help, first reset the device and ultimately also the laptop.

8.2.10 ERROR: 734 - The PPP link control protocol was terminated.

Cause: The network disconnects the UMTS/GPRS session due to faulty parameters (e.g. APN name) being sent. If the user logged on to the PC does not have administrative rights, the Operating System prevents the APN name from being set, and this error is observed on connection.

Troubleshooting:

- Check APN-name (case sensitive) and other configuration options.
- Enter the APN name directly in the Modem Properties / Advanced/ Extra settings. (Administrative Rights are required on the PC)
- e.g. AT+CGDCONT=1,"IP","APN","",0,0 (replace APN with the correct name)
- Reset the device/laptop. Upgrade the device with the latest firmware.

8.2.11 Error: Communication port opening has failed: can't open the serial port, The specified network name is no longer available.

Cause: There can be multiple causes of this error message, but the most common one is that the modem driver selected from Communication Centre is corrupt or does not exist on the system.

Troubleshooting:

- Check that the modem exists under 'Modem Properties' in the Control Panel and is in fact the one used/selected from Communication Centre.
- If necessary reinstall the modem and then select it from Communication Centre

Additional Details: In some cases, a plug 'n' play installed IR-modem may override a manually installed, already existing, modem of the same kind. In the modem list in Communication Centre, the old modem will still be visible until next reboot. This modem entry will not work and selecting it may cause the above error message to be displayed.

8.2.12 Your operator did not license this software

Cause: This error means that the user is trying to use the software in another operator's network (ie with a SIM card that does not belong to T-Mobile). Communication Centre is designed to prohibit such a connection.

Troubleshooting:

- If using a T-Mobile SIM, restart the device and reattempt the connection, also check wilog.txt trace.
- Contact T-Mobile Support for details.

8.3 Summary of some useful Troubleshooting Tools

8.3.1 Freeware Tools

Mark Russinovich and Bryce Cogswell provide a bunch of useful freeware tools, downloadable from their website: <http://www.sysinternals.com>

Following tools are useful for troubleshooting:

PortMon: a monitoring tool for all serial and parallel port activity. It has advanced filtering and search capabilities that make it a powerful tool for exploring the communication on the port.

FileMon: monitors and displays file system activity on a system in real-time. s.

TDIMon: is an application that lets you monitor TCP and UDP activity on your local system. It is the most powerful tool available for tracking down network-related configuration problems and analyzing application network usage.

Regmon: is a Registry monitoring utility that will show you which applications are accessing your Registry, which keys they are accessing, and the Registry data that they are reading and writing - all in real-time.

This is just a short collection. More tools can be found on the website.

There are also a good tools available for real time file viewing:

BareTail: is a real-time file viewing utility. Like the Unix *tail -f* utility, it can be used to view the end of a growing file. It can be downloaded from: <http://www.baretail.com>

This tool can be used with the Communication Centre **logfile.txt** and **wilog.txt** for real time monitoring.

8.3.2 Microsoft tools

Microsoft Windows provides an integrated Modem Diagnostics and log generator. You can reach this functionality by following the steps below:

- Connect the modem to the PC.
- Make sure that Communication Centre is not running.
- Choose Settings / Control Panel / Modem.
- Choose the modem giving problems, Properties / diagnostics.

Here you can either

- “Query Modem” – immediately returns the software version of phone and diagnostics.
- “Enable Logging” - check the box to append modem data to a log. You then need to attempt a connection, then return to “View log”.

Microsoft also provides information about “How TO Enable PPP Logging in Windows” in their support web site:

Win 2k: <http://support.microsoft.com/default.aspx?scid=kb;en-us;Q234014>

Win NT: <http://support.microsoft.com/default.aspx?scid=kb;en-us;Q115929>

Others: <http://support.microsoft.com/default.aspx?scid=kb;en-us;Q156435>

8.3.3 Layer 3 (tracing) tools:

Microsoft Windows command line interface also provides some useful tool for Layer 3 tracing.

ipconfig /all - useful to view client IP address, and DNS details assigned.

Win 98: instead, run *winipcfg /all*

ping (the address of a reliable node on the network, to check the network connectivity). Note: Some Networks and hosts will block or not respond to Ping.

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]

[-r count] [-s count] [[-j host-list] | [-k host-list]]

[-w timeout] destination-list

tracert (if address not reachable by ping, you may see which network node causes problem using this utility)

Usage: tracert [-d] [-h maximum_hops] [-j host-list] [-w timeout] target_name

nslookup usefull to find IP addresses for domain names

8.4 UMTS/GPRS Troubleshooting

It's often a good idea to test the connection with a Windows Dial-up networking (DUN) profile. If the same problem occurs here, it is very likely that the problem is not directly related to Communication Centre, but to the hardware or Windows RAS software.

Also, it is a good idea to test the connection with different modem drivers. It's always possible to install a Windows 'standard modem driver' from the Modem Properties dialog in the Control Panel and then use this modem from Communication Centre.

8.4.1 How to make a MS Dialup Networking connection:

The example below is for Windows 2k, each OS will have a slightly different naming convention, but the process is in the main, the same.

First make a connection attempt using Communication Centre and the terminal causing problems. You will reuse some of the parameters from the trace log.

Within the trace file Wilog.txt use search to find MobileSettings and MobCom. Settings you should look for are:

[00000714 17:00:20:069, MobileSettings , 50] - loaded PhoneNumber command from NOKIA :D211 : *99*10#**

[00000714 17:00:19:709, MobCom , 103] - send command : AT+CGDCONT=10,"IP","", "",0,0

bold - this is the info which should be extracted, and reused with RAS

italics – ignore, this is both time and phone dependant.

For the example above you should remember:

- dial number: ***99***10#**
- modem command: **AT+CGDCONT=10,"IP","", "",0,0**

Then create a new dial up connection from:
Start Menu / Settings / Network and Dialup Networking / Make a new Connection.

- Choose “Dialup to Private Network” (this is the simplest and quickest to setup).
- Choose the same modem driver as is used with Communication Centre (select only one).
- Enter the Phone number: ***99***10#**
- Continue to choose default options, until a new DUN connection is made.
- Now, enable a UMTS/GPRS connection direct from the modem:
- Start Menu / Settings / Control Panel / Phone and Modem Options
- Under modems, select the modem that has been chosen above.
- Choose Properties / Advanced / Extra Settings.
- Add the following:
- **AT+CGDCONT=10,"IP","", "",0,0**

Now make a connection using the Dialup Networking entry created above, using the username and password used.

8.4.2 Troubleshooting the GPRS PC-card from T-Mobile

Check the SIM is inserted in the card

Check the correct PIN code has been entered - if the PIN is entered incorrectly the user is prompted to enter again (up to 3 times, after which the SIM is locked, requiring PUK to enable)

On the PC:

- Default Modem should be set to: WCM Modem (GSM).
- Check Settings / Control Panel / System / Hardware / Device Manager / Ports / WCM *.*.
- Check Settings / Control Panel / System / Hardware / Device Manager / Modems / WCM Modem (GSM) for any error messages or hardware conflicts.

8.4.2.1 WIRELESS LAN TROUBLESHOOTING

Verify that the Wireless Network card is properly installed, and that the manufacturer's drivers and firmware for the card installed. Make sure that the card is inserted fully in the PC, and that the adapter is "Enabled" by the operating system.

For the proper function of the WLAN module within Communication Centre the Odyssee software has to be installed properly and the service has to be bound to your WLAN card. You can verify this by:

- Right click the tray icon for the WLAN connection
- Select "View available networks"
- Select advanced
- Select the tab "General"
- Check whether there is an entry for "Odyssee Network Services" and whether the checkbox is ticked.

- In case the “Odyssee Network Services” is not available go to Windows/downloaded installations and install Odyssee
- In case the check box is not a ticked, check it
- Note: Unticking the checkbox before “Odyssee Network Services”, will give full control of the WLANcard to Microsoft Windows. This is useful for checking the proper installation and configuration of the WLAN card.

If the above fails, and there is no problem with the Access Point check for hardware and software issues at the client:

- Does the OS recognize the PC Card - Check Control Panel / System / Device Manager.
- Are there any IRQ or other resource conflicts?
- Check there is enough power to the laptop computer, as the PC Card is not powered independently.
- Check that the card is inserted with the correct side facing up.
- Check the PC card connector for any problems, like bent pins or blocked connectors.
- Insert the card into another slot of the PC (if available).
- Install the card in another computer.
- Install a different card in the computer.

8.4.3 SMS

For problems sending/receiving SMS messages:

- Check the SMS recipient's phone number.
- Check the SMS Service Centre Settings under Tools/SMS Settings.
- Resend the message, this time checking the option "Request status report" in SMS Settings.
- Increase the message validity duration.

By default, the service center used is as defined on the SIM card in the device or PC card. It is also possible to enter a new Service Center via the GUI.

Typical Settings on the SIM include:

(Recommended values are marked with *)

Msg. centre in use: Depends on the network operator

Receive report:

Message validity:

Long Messages: *ON

Message sent as: *Text (Fax/Paging/E-mail not supported)

Preferred connection: *GSM (or UMTS/GPRS)

8.4.4 Troubleshooting IP/DNS assignment:

Data Transfer/Surfing problems

In a UMTS/GPRS network, the T-Mobile Connection Center software enables IP connectivity using a telephone or PC Card modem device (fixed or mobile). A “network adapter”, called the “**PPP adapter**”, is enabled on the PC and upon connection is assigned an IP address, DNS server address(es) by the network. This network adapter can be monitored, to see the relevant IP information, just like any other e.g. Ethernet LAN adapter. In addition T-Mobile Communication Centre also enables automatic launch of the users default Web browser to open a pre-defined web URL, and integrated session management for e-mail.

In a Wireless Lan environment, the T-Mobile Connection Center software uses a network adapter whose name is not generic but rather dependant on which adapter is installed on the PC.

If the Layer 2 connection is successful (ie the connection is successful), but the user cannot surf or send/receive e-mails then check the following:

- Check for possible incompatibility of PPP/IP settings with the Network (UMTS/GPRS/GSM only). See Troubleshooting PPP/IP settings.
- Check for possible IP address/DNS related problems.
- Check the version of web browser installed, on the PC, it should be Microsoft Internet Explorer 5.5 or above.

Troubleshooting PPP/IP settings:

For the profile in use, change the Connection parameters in the following locations, to uncheck all PPP and IP compression options.

- Connection / PPP tab
- Connection / UMTS/GPRS tab

Now retest the connection and attempt to surf.

Troubleshooting IP/DNS assignment:

A DNS (Domain Name Server) translates a resource name that is easy for a user to remember e.g <http://www.t-mobile.com> into an IP address, which is required to reach the resource. It is possible to bypass the requirement for DNS, by entering directly the IP address to the resource.

Symptom: The modem connection succeeds, but the user is unable to surf/access e-mail etc.

To Confirm IP-connectivity:

From the browser, enter the IP address of a well-known web address or host using an IP address rather than the domain name. If this works, then the IP connectivity is ok, but a DNS server has not been assigned, or is not functioning.

Useful system info can be retrieved using the *winipcfg* or *ipconfig* from the command prompt, note the connection must be established to observe the correct adapter information:

Windows 2k, Windows XP, Windows 98SE:

- From the “Start” Menu choose “Run” and enter “cmd” or “command”
- In the “Dos box” that is opened type *ipconfig /all*
- Note: The information of interest is under ‘**PPP adapter**’

Win 98SE

- From the “Start” Menu choose “Run” and enter “command”
- Type *winipcfg /all* (Look at the displayed info under ‘PPP adapter’)

```

C:\WINNT\System32\command.com
Physical Address. . . . . : 00-00-0E-D5-AE-6F
C:\>ipconfig /all
Windows 2000 IP Configuration

    Host Name . . . . . : LAGL
    Primary DNS Suffix . . . . . : northstream.se
    Node Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : Yes
    WINS Proxy Enabled. . . . . : No
    DNS Suffix Search List. . . . . : northstream.se

PPP adapter {509AF8DD-3B01-471E-B801-2A55992AA311}:

    Connection-specific DNS Suffix . . . : WAN (PPP/SLIP) Interface
    Description . . . . . : WAN (PPP/SLIP) Interface
    Physical Address. . . . . : 00-53-45-00-00-00
    DHCP Enabled. . . . . : No
    IP Address. . . . . : 10.144.1.192
    Subnet Mask . . . . . : 255.255.255.255
    Default Gateway . . . . . : 10.144.1.192
    DNS Servers . . . . . : 10.0.0.1
                           10.0.0.2
    NetBIOS over Tcpip. . . . . : Disabled
  
```

NOTE: the above addresses are listed for illustration purposes only! Each network will have a different set of assignable IP addresses as well as DNS addresses.

There will typically be more than one Network adapter installed on the Laptop.

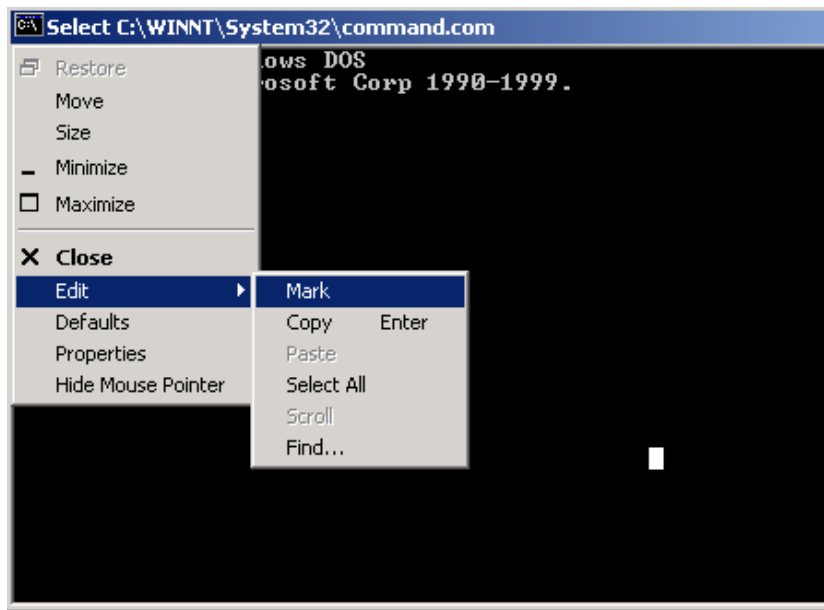
First look for the PPP adapter – if this is not present, then the connection has been dropped, reconnect and rerun ipconfig /all

If Wireless LAN, the adapter is always present, if the software for the adapter has been correctly installed.

Then check that an IP address has been assigned to the adapter. In the example above, it is correctly assigned: 10.144.1.192

Then check that at least one DNS Server is assigned. In the above example it can be seen that the addresses 10.0.0.1 and 10.0.0.2 are correctly assigned.

Note: it is also possible to copy and paste information from the command window, by selecting the Edit options from the dropdown menu available by clicking on the upper left icon. This information can be pasted e.g. to notepad, and forwarded to support.



If the IP address is assigned correctly, but there is no DNS address, this may be assigned statically via Communication Centre.

If neither IP address nor DNS address is assigned then you may need to contact your Network Administration department check that the Radius or DHCP server serving the GGSN/Access Point to which the customer is attached is functional.

If both the IP address and the DNS address are assigned then:

Check both addresses are accurate and routable in your network.

Check for problems with NAT (Network Address Translation). NAT is often used on a server by companies that let their employees surf the Internet using only one IP address and that directs traffic through this server, though each user has their own IP address locally on the Intranet.

Lastly, there may be a routing problem from the GGSN or Access Point to which the customer is attached, so again check with the network administration department.

Frequently Asked Questions (FAQ)

Question	Answer
What should I do if I change my UMTS/GPRS Terminal?	<p>The majority of Communication Centre settings remain the same, however you may need to install the modem, if it is not available under Communication Centre already.</p> <p>You need administrator privileges on your PC to run the Modem Setup dialog. Contact your PC system administrator.</p> <p>Start Communication Centre.</p> <p>Select Configuration / Miscellaneous / Default UMTS/GPRS Modem</p> <p>Select Install new device...</p> <p>In the right hand drop-down menu select the interface.</p> <p>Then in the right hand menu you can select the new device.</p> <p>Alternatively if you use this new modem only occasionally in addition to your existing modem, you can dynamically select it in a specific profile.</p>
Do I need administrator privileges to install ?	<p>Yes, you need local administrator privileges on your PC to run the installer package and subsequently to run the Modem Setup dialog. when installing support for a new PC card, or in some cases when changing the properties of existing drivers.</p> <p>Please note this refers only to Windows NT, Windows 2000 and Windows XP, other operating systems do not enforce local privileges.</p>
When should the Network bearer Override feature of Communication Centre be used?	<p>Communication Centre is set to automatically select the optimal network bearer signal, and by default will attempt to connect to a T Mobile Wireless LAN hotspot.</p> <p>The T-Mobile Communication Centre will check if there is a WLAN available and if so – use that to connect</p> <p>If no WLAN is available the software will automatically switch to UMTS/GPRS if available.</p> <p>The override feature should be used when e.g.</p> <ul style="list-style-type: none"> -A T-Mobile hotspot is available and the user has a valid voucher, but there is a problem routing traffic from the Access point to the core. -There is local interference which means Wireless Lan Communications are sub optimal.
The software you are about to install does not contain a Microsoft Digital Certificate	<p>This message may be observed on Windows 2k and XP Operating Systems, when installing hardware drivers (e.g. UMTS/GPRS PC cards), and is commonly seen.</p> <p>As long as you are certain of the source of the driver you may safely continue.</p>
What UMTS/GPRS communication speeds can I expect to obtain?	<p>UMTS/GPRS - The theoretical max is 53,6 kbps, but initial UMTS/GPRS terminals are expected to support less - only one, two or three timeslots limiting speeds to between 30 and 40 kbps. Unlike the other bearer services listed below the UMTS/GPRS does not use a fixed channel and bandwidth but is a shared resource, controlled by the network, which means that data rates will also be limited by net.</p> <p>GSM - a fixed timeslot or channel supporting 9.6kbs or 14.4kbps.</p>

9 Definitions and Abbreviations

Terms	Definitions
APN	<i>Access Point Name</i> The logical name of the point of entry to external packet data networks from a UMTS/GPRS network
CHAP	<i>Challenge Handshake Authentication Protocol</i> Negotiates a secure form of encrypted authentication by using Message Digest 5 (MD5), an industry standard hashing scheme.
COM	<i>Communication port</i>
DNS	<i>Domain Name System</i> DNS is a service that maps the internet domain space of logical names with IP addresses..
GGSN	<i>Gateway UMTS/GPRS Support Node</i> A node that is one of the key functional elements of UMTS/GPRS and enables the transition of cellular networks with a PDN.
GPRS	<i>General Packet Radio Service</i> An extension of the GSM standard to enable packet switched data transfer. By the use of multiple time slots it is possible to receive higher bandwidth than on circuit switched connections.
GSM	<i>Global System for Mobile Communications</i>
IETF	<i>Internet Engineering Task Force</i>
IMAP4	<i>Internet Mail Access Protocol version 4</i> The IMAP4 protocol is used by mail clients to access e-mails without the need for downloading them from the mailserver.
IP	<i>Internet Protocol</i>
ISP	<i>Internet Service Provider</i>
KB	Kilo Byte

Terms	Definitions
LCP	<p><i>Link Control Protocol</i></p> <p>Link Control Protocol establishes and configures PPP framing. PPP framing defines how data is encapsulated before transmission on the wide area network. The PPP standard framing format ensures any vendors' remote access software can communicate and recognize data packets from any remote access software that adheres to the PPP standards. LCP also includes procedures for negotiating which authentication protocol to use, as well as other link-layer related parameters (MTU size, multi-link...).</p>
MB	Mega Byte
PAP	<p><i>Password Authentication Protocol</i></p> <p>PAP is a simple authentication protocol using unencrypted plain text credentials. This is the least sophisticated authentication protocol.</p>
PDP	<p><i>Packet Data Protocol</i></p> <p>In UMTS/GPRS standards, this is the protocol used in the external network (X.25, OSHP, PPP, IP). In the currently deployed networks, only IP is in use.</p>
PLMN	<i>Public Land Mobile Network</i>
POP3	<p><i>Post Office Protocol version 3</i></p> <p>Protocol used by e-mail clients to get messages downloaded from a POP3 mail server.</p>
PPP	<p><i>Point to Point Protocol,</i></p> <p>A protocol for communication between two computers using a serial interface, typically a personal computer connected by phone line to a server.</p>
PSTN	<i>Public Switched Telephone Networks</i>
RAS	<i>Remote Access Service</i>
SGSN	<p><i>Serving UMTS/GPRS Support Node</i></p> <p>A functional element of the UMTS/GPRS network that enables basic packet switched networking</p>
URL	<i>Uniform Resource Locator</i>

Terms	Definitions
WINS	<i>Windows Internet Naming Service</i> Manages the association of workstation names and locations with Internet Protocol addresses.