Requirements on Sales Channel Partners for providing Mobitex Local Support or Managed Services

1 Introduction

The objective for this document is to support Mobitex partners in setting up a Local Support Centre, LSC, for first-line support and Managed services. The second line support is carried out by TAC at Mobitex Technology in Sweden. Support for other equipment included in the end-to-end solution could be set up in a similar way.

The commercial aspects are not covered in this document. It is however a prerequisite that there exists a service agreement between the end-customer and the LSC to which the support provide partner belongs. This agreement should match the agreement between the support provider partner and Mobitex Technology.
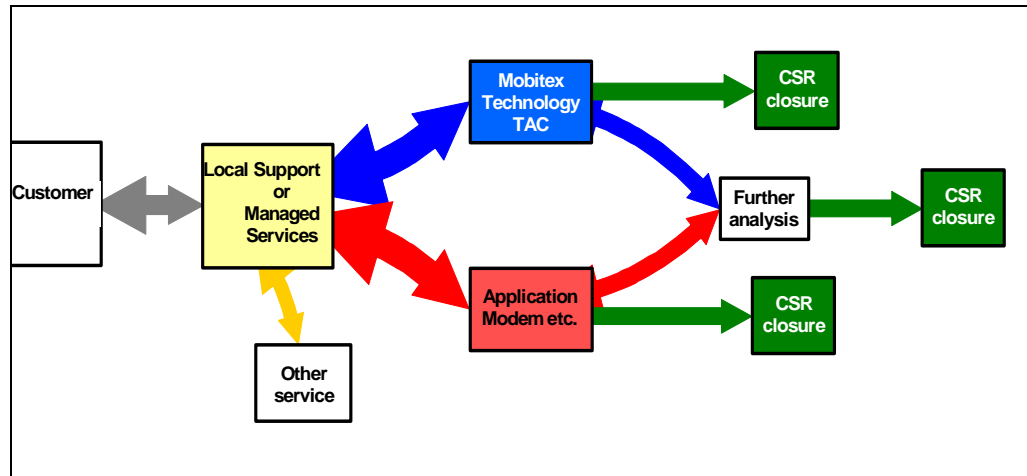
This document is aimed for the System Support service managed by a LSC. Other services, such as software and hardware maintenance are not covered in this document since this is normally carried out by Mobitex Technology and the HW supplier.

The above policy is also valid for Application support, Modem support and other components constituting the end-to-end solution.

2 System Support Service

The scope of the service is specified in the Service Agreement. In this chapter the typical tasks are specified.

System support Help Desk is available from LSC during normal working hours (08.00-17.00 local time, unless otherwise agreed). A support telephone number should be available, which is answered by a support person during normal working hours.

LSC or TAC may assist outside normal working hours, upon the customer's written request at least two weeks ahead (on-call or on-site support will be charged).

LSC will keep a Mobitex client library and a Mobitex Interface Specification (MIS). TAC will inform when there are updates to these manuals or when a new CD version is available.

2.1 Telephone assistance

Telephone assistance is available during Normal Working Hours. FSC or TAC will inform Customer at least one week in advance when the System Support Service is unavailable due to holidays.

LSC will inform the customer, two weeks before, when office is closed for holidays.

TAC will inform LSC one week before the office at Mobitex Technology is closed for holidays.

2.2 Workarounds

TAC will develop and approve a temporary solution when possible.

LSC will install the temporary solution when needed.

2.3 Reference test plant

TAC will test and simulate problems in the TAC test network when deemed necessary.

LSC will test and simulate problems in the customers test network when possible.

2.4 Customer meetings

LSC will offer telephone or on-site meetings with the customer every two weeks, or agreed between LSC and TAC, where the LSC should write minutes of meetings including a status of open trouble reports. The document will be distributed to the customer and TAC.

2.5 Installation assistance

LSC will provide the assistance over the phone and during office hours when for instance new nodes are added or moved. TAC will support the LSC in the same way.

2.6 Consultation

LSC will log all inquires that are solved by phone within an hour. This should be done in the DDTS. The reason is to have the information available if a re occurrence should happen and in this case the information may be needed to open up a trouble report.

LSC will request the customer to write a trouble report for every inquiry that cannot be solved by phone.

LSC will make sure that the trouble report enters the DDTS system or enters TAC.

2.7 Upgrade support

TAC will install the NCC software and one path down to base station level of a major or minor release, as a separately offered service.

LSC will install the Node software of a major or minor release, as a separately offered service. Upgrade support will be provided either if included in contract or separately offered service.

2.8 Emergency support

The emergency support is a 24-hour telephone support service available seven days a week. The Emergency support service gives the Customer access to an emergency support phone number, that can be called if for example one of the below mentioned serious situations occur.

- Loss of contact between the NCC and the network.
- Outage of the Operation & Management applications.
- Node outage, resulting in traffic-handling capacity being severely reduced, according to the Customer.

The mentioned conditions are emergencies and trouble reports from these situations are mainly classified as A, B1 or B2

LSC and/or TAC will have the emergency support (24 hours).

TAC will have a list of Home Telephone Numbers to the LSC staff members that may be contacted by TAC outside Normal Working Hours during an emergency situation. The support person shall, if possible, accept the call for assistance from TAC and start to work at home, at the office or perform on-site support at the customer's site.

3 Human Resources

3.1 Staffing

The size of the support organization will depend on the volume of the support business. The support engineer role is always necessary. When the operations grow there is a need to coordinate, manage and administer.

The LSC should have at least two dedicated support engineers to manage the support or Managed Services. This is necessary to make it possible to cover up for training, traveling and illness etc. If the support volume is small they can however have other tasks as well. If a 24-hours, seven days per week availability is needed then the minimum number is three dedicated persons.

3.2 Skills

The support engineers need to build and maintain a high competence level. Areas that need to be covered are:

- General Telecom and Datacom knowledge

- Networks (LAN and WAN, X25 and TCP/IP especially)

- Mobitex network and subscription administration

- SUN/Solaris and AXP/VMS skills

- Trouble shooting skills for making first analysis and gather relevant information for second analysis

- Languages skills (English and local language)

- Social skills to be able to meet End-Customer in a professional way

The following courses are mandatory:

- Mobitex System Overview

- NCC Operation and Maintenance

- Network Installation and Maintenance

- Emergency Restoration and Fault Detection Exercise

Exchange of personnel between the LSC and TAC is another way of building/sharing competence. The job rotation period should be around two months. On a yearly basis staff should visit TAC for a few weeks in order to practice and require new skills.

On the job training, where more experienced staff is guiding new employees, is also a natural way of building competence within the organization. In the beginning, staff from TAC is required to be at the LSC for a longer period of time.

4 Methods and Tools

A "standard office" environment is needed with phones and PC's having Internet access.

4.1 Help desk tool

Trouble reports are logged and tracked in a tool called DDTS from Rational.
To be able to make trouble report (TR) registrations on the Internet the Customer will need access to a website, using an individual user-id and password. This will be provided upon request sending e-mail to tac@mobitex.com. The Customer will be able to access a filtered view of the trouble report tool called "ClearDDTS". Instructions on how to use "ClearDDTS" can be found on the start page when logged in.

By using "ClearDDTS" the Customer will be able to:

- view the current status for of the trouble reports.

- search old trouble report descriptions and answers.

- easily add new information to trouble reports.

<u>Trouble Report Submit Form</u>

This is an example view on the Trouble Report submitting form in ClearDDTS. The different fields that has to be entered by the Customer are described below

1. Class

Should always be the predefined option MbxTac

2. Project

Should be MbxTr. However there is also an MbxTr-test option that allows the Customer to practice how to submit a new trouble report (TR).

3. Subsystem

Node, NCC, Clientdoc, HW, Mobile or Gateway (GW).

4. Mbx rel

The release installed in the Customer's network or in the current node facing problems, for instance NTE R7 or NTE R8.

5. Enhancement request

This field should be marked if the TR ends up with a request for improved functionality.

6. Headline

A short problem description.

7. Hardware

Depending on which subsystem (3) the hardware can differ. However there are predefined options to chose from.

8. Node number

The number of the node that is being troublesome.

9. External reference

Could for instance be the name of the TR issuing person or the Customer's own reference number.

10. Class

Class can either be A, B1, B2 or C. For more information about classification see section 4.6.4.

11. Operator

This field contains the code of the Company.

12. Operator allows view

If this box is marked the Customer allows other operators to view the problem and solution.

13. Description

Use this field to describe the problem or question in detail.

14. Submitter information

These fields should contain information about the trouble report issuing Company, i.e. name, company and e-mail address.

4.2 Installation tools

A portable PC is needed for on site visits and interacting with Mobitex nodes. There could be use for other tools such as a protocol analyzer and Radio Sniffer needed for trouble shooting purposes. Installation of Mobitex nodes must only be performed by certified personnel. Certification is awarded by attending the NIM course as well as after participating in installations performed by TAC personnel.

4.3 Information about customer systems

For each supported customer system there is a need to maintain information about e.g. installed SW and corrections, HW configuration, network configuration maps, number of nodes and subscribers and support contract details. This information must be easily available for the support engineers at both TAC and LSC.

4.4 Remote access

To speed up the support process it is a requirement to be able to remotely log on to the customers system. This is especially important when involving second line support.

4.5 Interfaces

Contact information for End-Customers, LSC, Mobitex Technology and Third party (e.g. SUN and Compaq) products must exist. This information should be:

- contact persons

- telephone and fax numbers

- email addresses

- remote login instructions (as agreed with End-Customer)

- Working procedures between End-customer and Mobitex Partner

- Service agreements with End-customers

4.6 Trouble Report handling

The routines including answering times are specified in the service agreement. The actions and flows described in this chapter reflect a typical system support contract, but may of course be different depending on the contract.

4.6.1 Submit

The customer will log a trouble report using the web interface towards DDTS. The DDTS tool sends an acknowledgement automatically to the customer, LSC and TAC

4.6.2 Action

LSC will, within one hour, start to solve the problem or provide a temporary solution to a trouble report of priority A or B1.

4.6.3 Temporary solution

LSC will within 2 hours call Emergency Support at TAC if LSC cannot solve or provide a temporary solution to a trouble report of priority A or B1.

4.6.4 Priority classification

LSC will negotiate with the customer the priority of a trouble report if it is not according to the priority classification described below.

Priority Classification of Trouble Reports (TR)

Priority Class	Affects	Examples
A	**System availability** • A catastrophic problem to the extent that the system cannot be used by the end users or network operator	• Network break down • Unable to transfer alarms from the network • Permanent loss of a subscription service or network function • Permanent traffic disturbance on a few subscribers • Loss of traffic data
B1	**Functionality of End User Services** • A serious problem to the extent that the traffic is disrupted for the end users	• Important node break down • Cyclic node or unit restart • Reduced traffic performance • Deviation from agreed specification

Priority Class	Affects	Examples
B2	**Functionality of Operation and Maintenance** • A serious problem to the extent that the network management is disrupted for the network operator	• Node or unit break down • Communication link disconnection • Reduced network performance • Loss of a NCC function • Deviation from agreed specification
C	**Product Reliability and Design** • A problem to the extent that it has no serious impact on the usability of the system or the functionality • Questions about the system or functionality	• Single node or unit restart • A high frequency of a specific fault • Other fault in service or function • Text or cosmetic fault • Technical questions • Installation questions

LSC will re-negotiate the priority of a trouble report with the customer when the impact or consequences of the problem changes in time (e.g. due to a temporary solution).

4.6.5 First analysis

LSC will request additional information from the customer as soon as possible after the trouble report is registered.

LSC will perform the 1st analysis and insert the result in the DDTS.

4.6.6 Second analysis

If LSC cannot answer the trouble report according to the Services Agreement, then will

LSC forward the trouble report to TAC after the first analysis has been completed

LSC or TAC will perform the 2nd analysis and insert the result in the DDTS.

4.6.7 Approved answer

LSC will write an answer based on the information found in the DDTS system. Before the answer is sent to the customer an email is sent to the TAC staff with the heading "Suggested TR answer on…." If no comments have been replied within one day the answer may be sent to the customer. LSC will send the approved answer to the customer and close the trouble report in the DDTS database (status Done).

4.7 Escalation routines

Established escalation routines must be defined. The purpose with this is to have a pre-defined way of handling situations where a problem is not possible to solve within the times outlined in the Service Agreement. Escalation routines are defined in the Service Agreement to the End-Customer, but will require special routines between LSC and TAC.

5 Reporting

5.1 Monthly

LSC will write a monthly report based on the standard form provided by TAC and sent to the TAC manager including which activities that have been carried out.

The performance of the LSC will be measured by the percentage of non-forwarded Trouble Reports to TAC. This figure will be measured by the LSC and included in the monthly report.

LSC will send a monthly record to the TAC Manager of time spent per customer.

5.2 Audit or account reviews

As part of the Support Services delivered review meetings between TAC and the LSC will be held at times determined and agreed upon by both parties.

The following subjects should be covered:

- LSC and TAC organizations and future plans

- Installed base at each customer

- Rollout and future plans at each customer

- Competence at LSC and TAC

- Trouble report statistics and product performance

- Feedback