

ORDERING AND DELIVERY PROCESSES FOR BROADBAND CONNECTIONS

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Name of the document WORKING GROUP REPORT 5/2005 ORDERING AND DELIVERY PROCESSES FOR BROADBAND CONNECTIONS			
<p>Abstract</p> <p>On May 24, 2004, FICORA established the Operator Interfaces of Broadband Connections working group to define the interfaces for services that will be procured from another telecommunications company and that will be used to provide broadband connections as well as their technical specifications. The Processes working group is one of the subgroups established by the main working group, and it started its work in September 2004. The working group will continue to develop the processes even after the publication of this report.</p> <p>The objective of the working group is to enhance and harmonise the exchange of information related to the ordering and fault management process between telecommunications companies in order to speed up the handling of transactions and to minimise the number of errors in them. The report of the working group deals with the ordering, delivery and fault clearance processes that relate to broadband connections, but the processes and mechanisms defined by the working group can also be applied to other products between telecommunications companies. In this report, the working group has defined those processes, the transactions required in them, the messages used in these transactions and the information contents of the messages.</p> <p>21 persons from 8 organisations have participated in the work of the Processes working subgroup:</p> <p>Jari Hiltunen (Finnet Com Oy / Finnet Oy), Mika Almgrén (Saunalahti Group Oy), Timo Fager (Saunalahti Group Oy), Ari Hassinen (Elisa Oyj), Simo Hautaluoma (Finnet Verkot Oy), Sanna Hughes (FICORA), Lea Ikonen (Sonera Carrier Networks Oy), Kim Jakobsson (TDC Song Oy), Jukka Kantinkoski (Elisa Oyj), Jouni Koikkalainen (TDC Song Oy), Paavo Koskelin (TeliaSonera Finland Oyj), Sami Lumpola (Saunalahti Group Oy), Yrjö Mironen (Elisa Oyj), Klaus Nieminen (secretary, acting chairperson) (FICORA), Mari Pietilä (TeliaSonera Finland Oyj), Sami Rissanen (Saunalahti Group Oyj), Pauli Ryppö (TeliaSonera Finland Oyj), Antero Saarinen (FICORA), Sirpa Sillstén (FICORA), Margareta Sundell (Elisa Oyj), Marko Taponen (TeliaSonera Finland Oyj).</p>			
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1 INTRODUCTION

On May 24, 2004, FICORA established the Operator Interfaces of Broadband Connections working group to define the interfaces for services that will be procured from another telecommunications company and that will be used to provide broadband connections as well as their technical specifications. In November 2004, the working group published its Operator Interfaces of Broadband Connections report (7/2004) that describes the implementation alternatives of bitstream services in ATM- and Ethernet-based DSL services and in cable television and WLAN networks.

In autumn 2004, the working group also began to define the ordering, delivery and fault management processes between telecommunications companies. The objective is to enhance and harmonise the exchange of messages between telecommunications companies in order to speed up the handling of orders and fault notifications and to minimise the number of errors in them. As a result of this definition work, the working group will publish its recommendations to automate these processes by means of an electronic interface.

The report of the working group deals with the ordering, delivery and fault clearance processes that relate to broadband connections, but the processes and mechanisms defined by the working group will also be applied to other products between telecommunications companies. In order to expand the application scope, the information contents of the messages described in this report will be updated in the autumn based on the experiences gained. Expansion possibilities include capacity and equipment facility services and cable data.

In this report, the working group has defined the ordering and delivery process as well as the fault management process, the transactions required in these processes, the messages used in these transactions and the information contents of the messages. This chapter briefly describes the parties to the processes specified by the working group and the products to be sold.

The working group recommends that telecommunications companies start to apply the recommendations given in this report as soon as possible, even before the changeover to the electronic system. Although telecommunications companies are encouraged to change over to the electronic transfer of messages, this may not, however, be economically viable for all telecommunications companies. Thus, telecommunications companies must also be prepared to apply the processes and mechanisms specified in this report manually, such as via e-mail or fax.

1.1 Process parties

The parties involved in the definition of the process interface are as follows:

- **Orderer:** A telecommunications company that carries out an availability enquiry, places an order or a modification order or serves a notice of termination to another operator. An Orderer can be a network operator or a service operator.
- **Supplier:** A telecommunications company that provides a connection or responds to an availability enquiry.
- **Sender:** A party from whose system a particular message originates.
- **Receiver:** A party to whose system a particular message arrives.
- **Customer:** A user who has concluded an agreement with a telecommunications company on using a communications service and to whom the service operator supplies a broadband subscription. In this report, the customer refers to both consumer customers and corporate customers.
- **Previous service operator (SO):** The Orderer of the subscription to be terminated in an exchange order, i.e. the Surrendering telecommunications company.

The separation of the concepts of Orderer and Sender as well as the concepts of Supplier and Receiver allows for the possibility that there may be parties involved in the process that deliver messages on behalf of the Orderer and the Supplier. The concepts of Sender and Receiver always identify the party from whose system the message originates or to whose system it arrives.

When placing an order, the Orderer can be the same organisation as the Sender:

Orderer → Sender → (Order) → Receiver → Supplier

When sending an order confirmation, the Supplier can be the same organisation as the Sender:

Orderer ← Receiver ← (Order confirmation) ← Sender ← Supplier

To enhance the clarity and intelligibility of this report, the transaction illustrations in it are simplified by omitting both the Sender and the Receiver.

1.2 Products to be ordered

This process description deals with the following products:

- **Subscriber line:** The subscriber line refers to a 2- or 4-wire connection (copper) from the Orderer to the exchange of the Supplier. Connection interfaces (A/F/G) are defined in Appendix 3 [in FICORA Recommendation 304/2005 S on the procedures related to renting local loops, local loop transmission capacity and equipment facilities].
- **Shared use of the local loop (shared access):** Shared use of the local loop refers to the use of high frequency band of the 2-wire connection. Connection interfaces (A/B/C/D/E/F/G) are defined in Appendix 3 [in FICORA Recommendation 304/2005 S on the procedures related to renting local loops, local loop transmission capacity and equipment facilities].
- **Access network connection:** The access network connection refers to an ADSL, ADSL2, ADSL2+, ADSL2++, ISDN, G.SHDSL, VDSL or VDSL2 port to which the subscriber line or the shared access will be connected. In connection with an order or an availability enquiry, the Orderer can also use the regular xDSL port product.
- **Backbone network connection:** The backbone network connection refers to transmitting and linking the connection to the (Point Of Interconnection) POI between the operators.
- **Cable data:** Cable data refers to a bitstream service to be implemented via a cable television network.
- **Service level agreement:** The service level agreement (SLA) refers to a service level provided by the Supplier, other than the default level, such as accelerated fault clearance.

Each availability enquiry, order or termination to be handled in the process concerns one logical connection. A logical connection, can, however, be made up of many physical components, which means that an availability enquiry, an order or a termination may contain more than one product. In connection with a service termination or an exchange order, the local loop used to connect the service should be terminated in full.

Example 1: The Customer has obtained a 2M/512k ADSL subscription from the service operator. The Customer does not have a fixed-line telephone subscription from the network operator. The service operator has its own DSLAM in the network operator's exchange.

→ The service operator (the Orderer) only orders a *Subscriber line (2-wire)* from the network operator (the Supplier).

Example 2: The Customer has obtained a 2M/512k ADSL subscription from the service operator. The Customer has a fixed-line telephone subscription from the network operator at the installation address of the ADSL subscription. The service operator does not have its own DSLAM in the network operator's exchange, but the service operator has a POI leading to the network operator's network in that area.

→ The service operator (the Orderer) orders *Shared use of a local loop*, *Access network connection* and *Backbone network connection* from the network operator (the Supplier) in one order.

2 ORDERING AND DELIVERY PROCESS

The working group has defined the following ordering and delivery transactions:

- Availability enquiry
- Order of a new connection (Order)
- Modification order
- Connection termination
- Exchange order
- Electronic invoicing

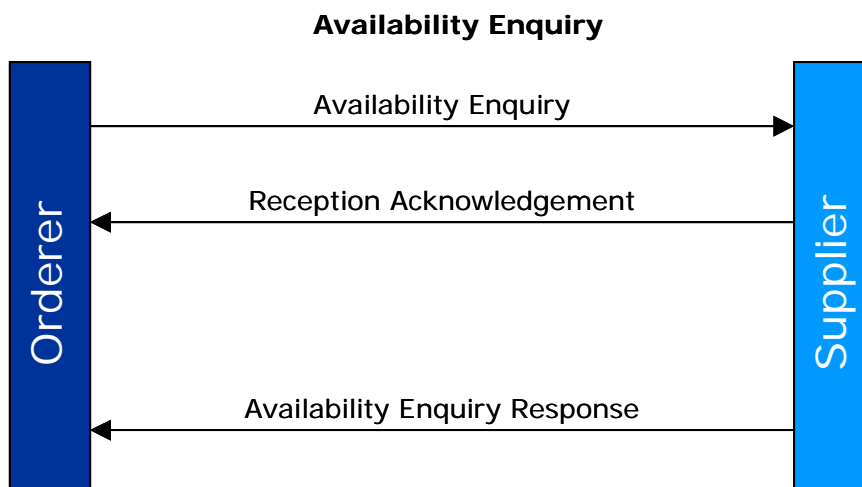
All messages used in transactions are identified as belonging to the same transaction by means of the orderer reference and the supplier reference. On this account, the Supplier should immediately acknowledge the first message of each transaction received with a reception acknowledgement message so that the supplier reference can be delivered to the Orderer as soon as possible. When receiving a message, each party should check that the identifiers match and that they are correct.

The Supplier confirms the order of a new connection, a modification order and an exchange order with an order confirmation, and a termination with a termination confirmation, within five (5) working days from the reception of the order at the latest. The Supplier confirms the delivery in accordance with the transaction by sending a completion notification to the Orderer immediately, and a completed disconnection by sending a termination confirmation.

The Orderer can cancel an order or a termination by sending a cancellation message, but its practical implementation and effects depend on the bilateral agreement between the Orderer and the Supplier. At the same time, the Orderer and the Supplier must agree at which stages of the delivery an order or a termination can be cancelled with a cancellation message. The Supplier can use the change of installation time message to inform the Orderer of the changed installation time. The Supplier can only change the agreed installation time for a justified and compelling reason.

2.1 Availability enquiry

The Orderer uses the availability enquiry to query the Supplier's ability to deliver a broadband connection to the address stated by the Orderer with the given parameters. The response to the availability enquiry should be given in "real-time". The Orderer must be able to order a broadband connection from the Supplier without making an availability enquiry beforehand.

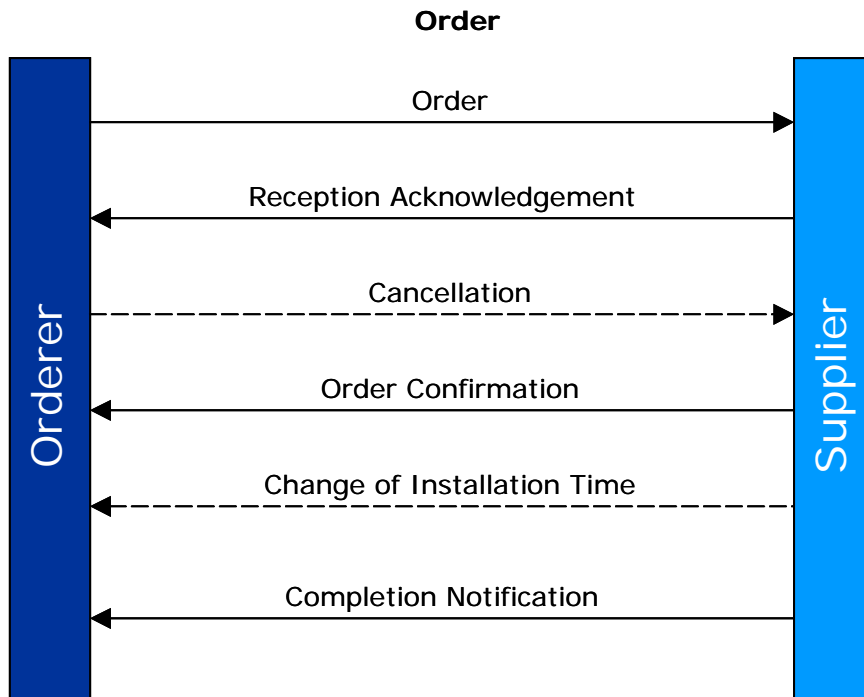


The Orderer can use the availability enquiry to ask the Supplier about the availability of one or more products. The response given by the Supplier should indicate the products that can be delivered to the address queried. For example, if all pairs of the drop cable are in use, it may be possible to deliver the connection on shared access. If the shared access is in use, it may be

possible to deliver the connection using a dedicated pair. In addition to providing responses to the availability enquiry, the Supplier should, based on the address queried, provide the Orderer with the information on whether the service in question is available in that area.

2.2 Order of a new connection (Order)

In accordance with the Order transaction specified in this section, the Orderer initiates the order of a new connection by sending an Order message to the Supplier.



In the Order message, the Orderer can specify whether the Supplier can replace a subscriber line with shared use of a local loop and vice versa. This situation may occur, for example, when the Orderer has ordered a local loop but the drop cable to the building is full and the local loop cannot therefore be delivered. Correspondingly, shared use of the local loop can be replaced with a subscriber line if the shared access is already in use.

Example 1: If the Orderer allows the local loop to be replaced with a shared-use product **AND** the Orderer possesses a proxy from the owner of the telephone subscription **AND** the Orderer has reported a shared-use number, the Supplier may change products on its own initiative if the local loop cannot be delivered. In this case, the actual products to be delivered should be specified in the order confirmation, i.e. the subscriber line product should be replaced with the shared-use-of-the-local-loop product in the order confirmation.

Example 2: If the Orderer allows the shared use of the local loop to be replaced with the local loop product **AND** the shared access to the reported shared-use number is already in use **AND** there is a pair available in the house MDF at the customer end, the Supplier may change products on its own initiative. In this case, the actual products to be delivered should be specified in the completion notification and in the order confirmation, if possible, i.e. the shared-use-of-the-local-loop product should be replaced with the subscriber line product.

When renting shared use of a local loop, the Supplier should, as a rule, rely on the information provided by the Orderer concerning the consent given by the party that signed the subscription agreement. A separate document on the consent given by the party that signed the subscription agreement must only be delivered to the Supplier if the Supplier asks for it in order to protect the rights of the Customer, and where if not delivered, this would be likely to cause problems to the Supplier. At the time of the writing of this report, a change was proposed to the relevant section of

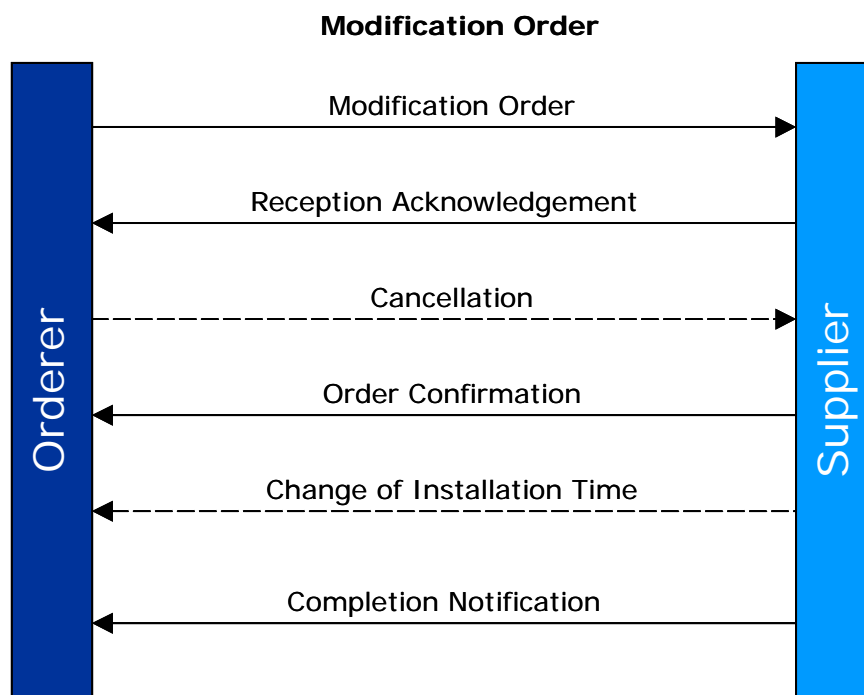
the Communications Market Act. The reader should thus check the current situation. Any change will also be updated to the working group report.

In addition, the working group recommends that the Supplier can automatically replace wall outlet (PiRa) installation with house MDF installation if it is not possible to deliver the subscriber connection to the wall outlet. The Supplier can make the change if wall outlet installation is not possible due to a missing subscriber line (uplink cable, or no pairs available on the uplink cable) or because the existing shared access is already in use. The Supplier must inform the Orderer of the change and its reason.

2.3 Modification order

The Orderer uses the modification order to order a modification of the features of an existing subscription from the Supplier. One modification order can be used to change one or several features of the subscription. The working group has identified the following modification cases where a modification order can be used:

- change of speed (access network product in an xDSL service between operators)
- shift from a subscriber line to the shared use of a local loop
- shift from the shared use of a local loop to a subscriber line
- change to the service level agreement for the subscription
- shift from an operator xDSL to the hiring of a subscriber line
- subscription transfer to another address (Transfer order)

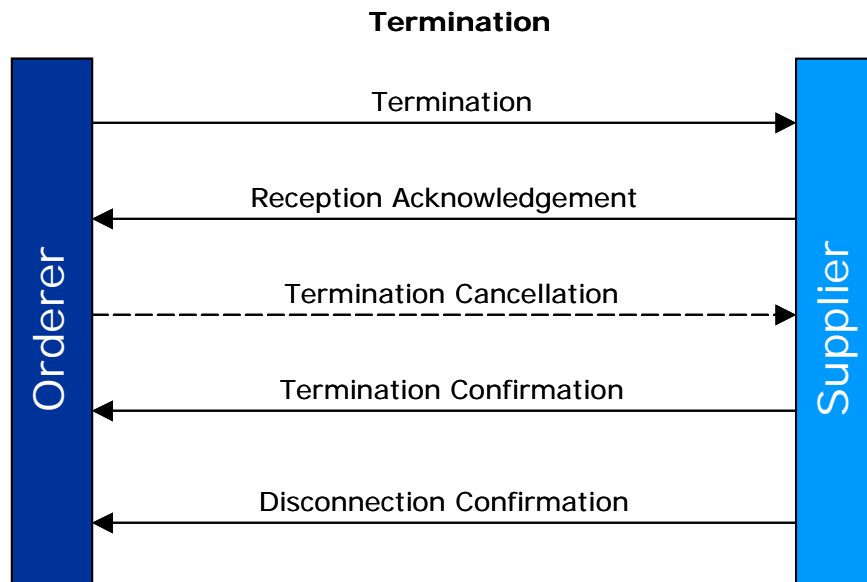


The Transfer order can only be used in the area of the same network operator (NO) and the same local numbering area (LNA). The products to be ordered on a Transfer order and their properties may also be changed. When products change, the Supplier can also change the connection identifier at the Supplier. In the electronic interface, the Orderer fills in all the necessary product fields for the products needed at the new address.

Example: At the previous address, the Orderer ordered the bitstream service (subscriber line product, access network product and backbone network product) from the Supplier. At the new address, however, the Orderer has its own DSLAM, which means that the Orderer only orders the subscriber line product from the Supplier.

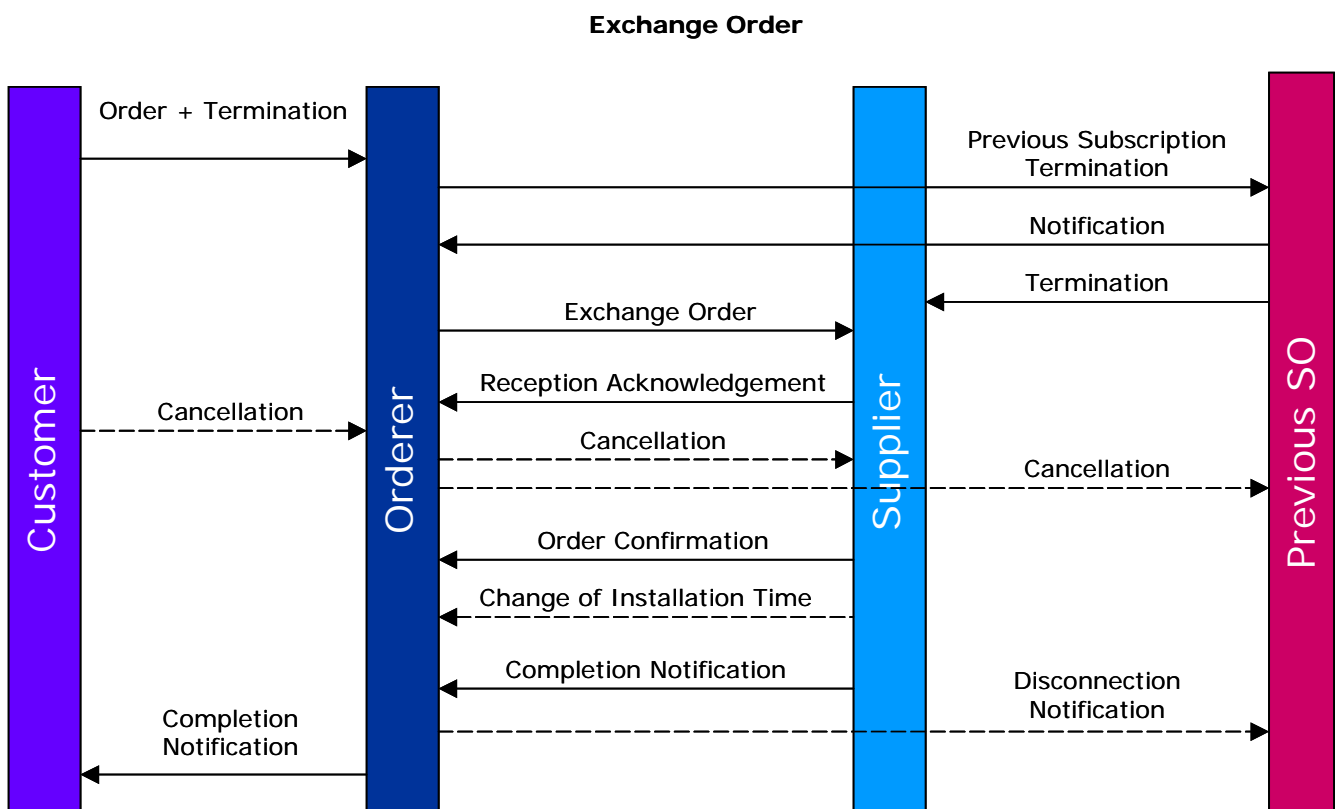
2.4 Connection termination

The Orderer can terminate an existing subscription by sending a Termination message to the Supplier.



2.5 Transferring a connection from one SO to another (Exchange order)

A service operator exchange order (Exchange order) is used when a Customer changes his/her service operator. The Exchange order is also used by the Orderer to terminate the subscription agreement that the Customer has concluded with the Previous SO. The Exchange order contains information on the authorisation given to the Orderer.



The Exchange order process is based on the trust between the telecommunications companies, and the Orderer should only send the termination proxy given by the Customer in exceptional cases where the protection of the rights of the Customer requires it, and where if not delivered, this would be likely to cause problems to the Previous SO or to the Supplier. The Orderer is responsible for the valid implementation of the Exchange order process in this respect. Therefore, the Orderer should check with the Customer that the Customer has the right to terminate the previous subscription.

After receiving the Exchange order placed by the Customer, the Orderer immediately informs the Previous SO of the termination of the subscription by sending a Previous Subscription Termination message.

The previous subscription is regarded as terminated on the day specified by the Orderer in the message, i.e. on the day the Customer terminated his/her subscription. This message should also be used by the Orderer to indicate whether the Customer wants his/her previous subscription to be disconnected immediately or on a certain day, or whether the Previous SO should wait for a Disconnection Notification before disconnecting the previous subscription and terminating the related services, such as e-mail. This procedure is used to minimise the service interruption experienced by the Customer.

As far as the above-mentioned alternatives are concerned, the Orderer should inform the Customer of any costs incurred to the Customer from the previous subscription, since the minimisation of the interruption may incur one month's extra cost to the Customer depending on the applicable agreements. The Orderer should also inform the Customer of the current average delivery time so that the Customer can decide on which day he/she wants the previous subscription to be disconnected. When querying the shared-use number, the Orderer should also be aware of the fact that the Customer's telephone subscription may also have been implemented over a broadband subscriber connection, for instance. This can be taken into account, for example, by allowing the Supplier to replace shared use with a complete subscriber line. For more information, please see Section 2.2. Order of a new connection (Order).

After receiving the Previous Subscription Termination message, the Previous SO should, within three workdays, respond to the Orderer with a Notification message stating any obstacles, and their reasons, to the termination of the subscription. (This is only the case if the terminating party does not have the right to terminate the previous subscription, i.e. the party in question has not signed the previous subscription agreement or if the agreement in force is of definite duration.) After the parties have adopted the electronic interface in full, the sending of the Notification message should take place in near real-time.

In the Notification response message to the Orderer, the Previous SO also specifies the Supplier of the previous subscription and the connection identifier at the Supplier. If the subscriptions are from different Suppliers, the Orderer should use an Order transaction intended to be used for ordering a new subscription between it and the Supplier of the new subscription. The obtained identification information is used to uniquely identify the Customer and the customer connection in the Exchange order message sent by the Orderer to the Supplier.

The Previous SO sends a Termination Notification to the Supplier of the previous subscription. However, the Supplier of the new subscription need not wait for the Termination Notification; the Supplier can start the exchange order process after receiving an Exchange order message from the Orderer. The parties must agree on the use of the Cancellation message and its impacts before the message can be utilised.

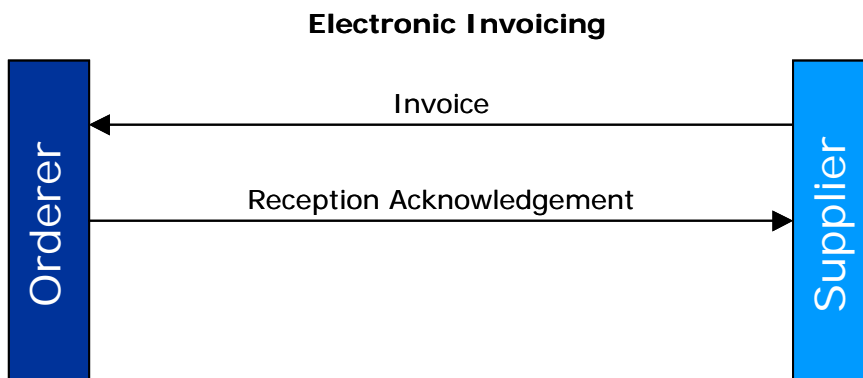
The Exchange order process can be used in the following situations:

- bitstream ⇒ bitstream
- local loop ⇒ local loop
- bitstream ⇒ local loop
- local loop ⇒ bitstream

- ISDN ⇒ bitstream/local loop
- other broadband access (e.g. cable data) ⇒ bitstream/local loop
- bitstream/local loop ⇒ other broadband access (e.g. cable data)
- change of the subscription supplier

2.6 Electronic invoicing

The working group has also defined an electronic invoicing transaction for verifying sent invoices and for streamlining other processes related to invoices. The Invoice message may contain several invoices from various product components with each product component added to the message as a separate Invoiced Product Information field. The invoice and the data transferred in the invoice should match the pricing criteria. The parties should agree on the introduction of the Electronic Invoicing transaction separately.



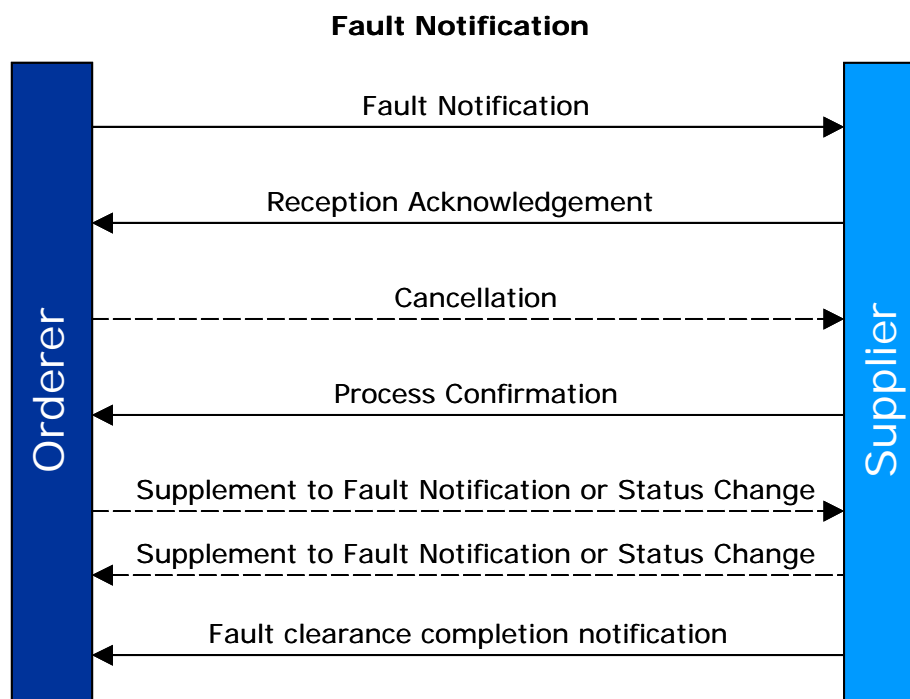
An example of the invoice line contents of an electronic invoice is shown in Appendix 4.

3 FAULT MANAGEMENT PROCESS

The working group has defined a Fault Notification transaction and recommendations for limiting faults in this report.

3.1 Fault notification

Using the Fault Notification transaction defined in this section, the Orderer can inform the Supplier of a fault detected in the service provided by the Supplier. The Orderer can only submit a Fault Notification for subscriptions that the Supplier has acknowledged as delivered by sending a Completion Notification. This means that the Orderer cannot use this notification in cases where the confirmed installation day specified in the Order Confirmation has been exceeded but the Supplier has not yet reported that the delivery is completed or that the installation time has changed.



The Supplier registers the Fault Notification message in its ticket system and immediately sends the generated reference number to the Orderer in a Reception Acknowledgement message. Since all messages used in this transaction are identified as belonging to the same transaction by means of the orderer reference and the supplier reference, the supplier reference must be delivered to the Orderer as soon as possible. When later receiving a message belonging to the same transaction, each party should check that the identifiers match and that they are correct.

The Orderer may cancel a Fault Notification it has submitted using a Cancellation message. After the Supplier has started to process the Fault Notification, the Supplier informs the Orderer of the initiated fault analysis process using a Process Confirmation message. In addition, the Orderer and the Supplier may send each other additional information about the reasons for the fault or the progress of the fault analysis using a Supplement to Fault Notification or Status Change message.

The Supplier informs the Orderer of the actions taken and of the conclusions reached on the basis of these actions, for example that the fault is cleared or that the service already functioned as desired, using a Fault Clearance Completion Notification message.

3.2 Fault limitation

Submitting and handling error reports may have been unduly delayed due to lack of knowledge regarding the special features of the wholesale products. The traditional multi-vendor environment, where the main objective is not to find the problem but to determine that it is not in one's own area of responsibility, is the actual challenge in troubleshooting. However, customers do not care whose responsibility the error is; the most important issue is to locate the problem and fix it. In order to expedite fault limitation as well as fault clearance, the working group recommends the following policy:

The Orderer analyses the operation of the service components and the parts of the network it is responsible for in accordance with its own fault process. If the analysis indicates that the fault (physical or logical) is in a service provided by the Supplier, the Orderer should inform the Supplier of the fault in accordance with the Fault Notification described in the previous section. The Orderer remains the 'owner' of the fault towards the Customer during the entire fault clearance process. The Supplier analyses the operation of the service components and the parts of the network that are related to the service in question and that it is responsible for, and reports the progress of the fault clearance and its results to the Orderer in accordance with service descriptions. If fault limitation and fault analysis so requires, the Supplier can also contact the Customer directly.

3.3 Disruption notification and maintenance interruption notification

If the Supplier detects disruptions or problems in the availability of the service it provides, the Supplier should inform the Orderer of the situation using the Disruption Notification. The Disruption Notification is not described in this report in more detail, but it should contain at least the following:

- the affected services with their connection and service identifiers
- the start time and the estimated fault clearance schedule
- the reason for the disruption and its impact on the services ordered

The Supplier should also provide information on the progress of the problem analysis every time the situation changes. The Supplier should also inform the Orderer after the problem has been cleared.

As for pre-emptive maintenance interruptions, the Supplier should, at the minimum, inform the Orderer of the following items at least 5 workdays in advance:

- the affected services with their connection and service identifiers
- the start time and the expected duration of the interruption
- the reason for the interruption and its impact on the services ordered

After maintenance is completed, the Supplier should send the Orderer an acknowledgement of the completed action. The Supplier should also inform the Orderer of any changes in the fault clearance schedule.

The Supplier should provide information on the maintenance tasks or faults that affect the service operation equally to all Orderers who have hired services that will be affected by the fault or the maintenance interruption.

4 PROCEDURES IN FAULT SITUATIONS AND IN EXCEPTIONS

4.1 Escalation

Escalation refers to communicating a fault/order incident to upper levels in the organisation in accordance with the pre-agreed rules. The purpose of escalation in these pre-agreed cases is to expedite the solving of a fault/order incident and to ensure the availability of the necessary resources. Escalation always calls for case-by-case consideration. For example, telecommunications companies must agree on the escalation levels (the persons to be contacted, the tasks to be performed at a particular level, and time limits) in advance.

The Orderer has the possibility to escalate the incident when the Supplier has not performed the agreed actions in the agreed manner within the agreed period of time. In fault incidents, for example, this can mean that fault clearance is delayed beyond the agreed service level or that the agreed delivery times are exceeded. The escalation procedure can also be used when the Supplier does not provide responses in accordance with the process, such as an order confirmation, completion notification or reception acknowledgements used in the electronic system, within the agreed period of time.

The Orderer escalates the incident by contacting the Supplier's point of contact and by expressing the desire to escalate the incident to a higher level in the Supplier's organisation. When escalating the incident, the Orderer should, at the minimum, provide the following information: the incident to be escalated, why the Orderer wants to escalate that particular incident and the contact information of the party that handles the incident at the Orderer. The Supplier should proceed according to its internal escalation procedure and provide a response to the Orderer. The Supplier can check the following points, for example:

- the current status of the incident
- whether errors occurred in the processing of the incident
- how the processing can be expedited; for example, whether new resources are needed
- how and when the Customer was informed of the progress
- what should be done next

4.2 Changes in the information contents of messages

Unexpected changes in the information contents of messages should be treated as fault incidents and reported to the sender of the erroneous piece of information in accordance with the process described in Section 4.3.

Example 1: The installation address given in the Order message is different from the installation address given in the Order Confirmation message. For example, the installation address may have changed from Beech Street to Beach Street.

Example 2: The orderer reference given in the Reception Acknowledgement message differs from the orderer reference in the Order message.

The Supplier may only change the information contents of the message fields as follows, without the change being counted as an error:

- **The technical connection identifier at the Orderer:** If the Supplier cannot use the identifier given by the Orderer, the Supplier can replace the identifier with an identifier that is unique at least within Supplier's own network.
- **The connection identifier at the Supplier:** In connection with a Modification order, the Supplier may change the identifier to better correspond to the new product (for example, when a bitstream order changes to a subscriber line product order).
- **Product information in connection with product replacement:** When replacing a product with another product (for example, the shared-use-of-the-local-loop product with a subscriber line product), the Supplier should also make a corresponding change to any

messages to be sent to the Orderer (Order Confirmation and Completion Notification). In this case, for the product replaced, the Supplier only fills in the replaced with the shared-use-of-the-local-loop product / subscriber line product field and the information of the product delivered or to be delivered.

In other cases, any changes made to information contents must be treated as errors.

4.3 Processing of erroneous messages

This process is used when the information contents of messages have changed in an unexpected manner as described in Section 4.2 or when a message received contains an error that was otherwise detected. This process is also used in situations where required information is missing in a received message.

Example 1: An Order message is used to order a bitstream service with the rate of 512 Mbit/512 Mbit/s, although the maximum rate sold is 8M/512k.

Example 2: An Order message is missing a connection identifier at the Orderer.

5 INFORMATION CONTENTS OF MESSAGES

The optional message fields are marked [in blue](#). The more detailed data specifications of message fields are presented in Chapter 6.

5.1 Information contents of the Availability Enquiry message

The Availability Enquiry message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)

[availability enquiry information](#)

- additional information

product information

[subscriber line product](#)

- number of wires (2/4)
- quality category (O quality, S.O quality)
- customer end
 - installation address
 - installation method (wall outlet (PiRa)/house MDF/connection cable pair)

[exchange end](#)

- connection interface (A/F/G) at the exchange end

[shared-use-of-the-local-loop product](#)

- shared-use number
- [connection interface \(A/B/C/D/E/F/G\) at the exchange end](#)
- installation address at the customer end

[access network product](#)

- port type (e.g. xDSL or ADSL)
- port downstream rate (kbit/s)
- port upstream rate (kbit/s)

[backbone network product](#)

- implementation technology (ATM/Ethernet)
- POI identifier

service level agreement product

code of the service level agreement specified by the supplier

5.2 Information contents of the Reception Acknowledgement message

The Reception Acknowledgement message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

additional information**5.3 Information contents of the Availability Enquiry Response message**

The Availability Enquiry Response message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

availability enquiry information

- additional information

availability enquiry response information

- offer identifier
- response type (approved/rejected)
- reason for rejection** (mandatory if rejected)
- additional information**

product information**subscriber line product**

- availability (can be delivered/cannot be delivered)
- number of wires (2/4)
- quality category (O quality, S.O quality)
- customer end
 - installation address
 - installation method (wall outlet (PiRa)/house MDF/connection cable pair)
- exchange end
 - connection interface (A/F/G) at the exchange end**
 - installation address
 - exchange identifier

shared-use-of-the-local-loop product

- availability (can be delivered/cannot be delivered)
- shared-use number
- customer end
 - installation address
- exchange end
 - connection interface (A/B/C/D/E/F/G) at the exchange end**
 - installation address
 - exchange identifier

access network product

- availability (can be delivered/cannot be delivered)
- port type (e.g. xDSL or ADSL)
- port downstream rate (kbit/s)
- port upstream rate (kbit/s)

backbone network product

- availability (can be delivered/cannot be delivered)
- implementation technology (ATM/Ethernet)
- POI identifier

service level agreement product

- availability (can be delivered/cannot be delivered)
- code of the service level agreement product specified by the supplier

5.4 Information contents of the Order message

The Order message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)

order information

- framework agreement number
- group invoice identifier
- invoice reference
- availability enquiry identifier (supplier reference)
- connection identifier at the orderer
- customer name
- desired installation date
- delivery priority class (high)
- additional information

product information

- subscriber line product
 - number of wires (2/4)
 - quality category (O quality, S.O quality)
 - customer end
 - installation address
 - installation method (wall outlet (PiRa)/house MDF/connection cable pair)
 - connection cable pair number (mandatory if the installation method above is connection cable pair)
 - installation contact person (end user/representative of the end user)
 - name
 - telephone number (mandatory if the installation method is wall outlet)
 - e-mail address
 - exchange end
 - connection interface (A/F/G) at the exchange end
 - connection cable pair number 1 (if the connection interface above is F)
 - connection cable pair number 2 (if 4-wire connection)
 - supplier can replace with the shared-use product
 - authorisation (authoriser name)
 - shared-use number

connection interface (A/B/C/D/E/F/G) at the exchange end

shared-use-of-the-local-loop product

authorisation (authoriser name)

shared-use number

customer end

installation contact person (end user/representative of the end user)

name

telephone number (mandatory if the installation method of the replacing product is wall outlet)

e-mail address

exchange end

connection interface (A/B/C/D/E/F/G) at the exchange end

connection cable pair number

supplier can replace with the local loop product

installation method (wall outlet (PiRa)/house MDF/connection cable pair)

connection interface (A/F/G) at the exchange end

connection cable pair number (mandatory if the installation method above is connection cable pair)

access network product

port type (e.g. xDSL or ADSL)

port downstream rate (kbit/s)

port upstream rate (kbit/s)

technical connection identifier at the orderer (e.g. DHCP option82)

backbone network product

implementation technology (ATM/Ethernet)

POI identifier

channel values (either VLAN or VPI/VCI must be specified)

VPI/VCI

VLAN

service level agreement product

code of the service level agreement product specified by the supplier

5.5 Information contents of the Cancellation message

The Order Cancellation message is used to convey the following information:

message header information

name (identifies the message type)

message identifier (identifies the message)

time stamp

checksum

sender information

identifier (identifies the organisation)

name (organisation name)

receiver information

identifier (identifies the organisation)

name (organisation name)

orderer information

identifier (identifies the organisation)

name (organisation name)

orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

[order cancellation information](#)

- additional information

5.6 Information contents of the Order Confirmation message

The Order Confirmation message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

[order information](#)

- [framework agreement number](#)
- [group invoice identifier](#)
- [invoice reference](#)
- [availability enquiry identifier \(supplier reference\)](#)
- connection identifier at the orderer
- customer name
- [desired installation date](#)
- [delivery priority class \(high\)](#)
- [additional information](#)

order confirmation information

- confirmation type (approved/rejected)
- [reason for rejection](#) (only mandatory if rejected)
- connection identifier at the supplier
- confirmed installation date
- [additional information](#)

product information

- [subscriber line product](#)
- replaced with the shared-use-of-the-local-loop product (yes/no)

number of wires (2/4)
 quality category (O quality, S.O quality)
[subscriber line length \(m\)](#)
 customer end
 installation address
 installation method (wall outlet (PiRa)/house MDF/connection cable pair)
 [connection cable pair number](#) (if the installation method above is connection cable pair)
 [drop cable pair number](#) (should be specified if possible)
 installation contact person (end user/representative of the end user)
 name
 [telephone number](#)
 [e-mail address](#)
 exchange end
 installation address
 exchange identifier
 connection interface (A/F/G) at the exchange end
 [connection cable pair number 1](#) (if the connection interface above is F)
 [connection cable pair number 2](#) (if 4-wire connection)
[supplier can replace with the shared-use product](#)
 authorisation (authoriser name)
 shared-use number
 connection interface (A/B/C/D/E/F/G) at the exchange end

[shared-use-of-the-local-loop product](#)

replaced with the subscriber line product (yes/no)
 authorisation (authoriser name)
 shared-use number
[subscriber line length \(m\)](#)
 customer end
 installation contact person (end user/representative of the end user)
 name
 [telephone number](#)
 [e-mail address](#)
 exchange end
 installation address
 exchange identifier
 connection interface (A/B/C/D/E/F/G) at the exchange end
 connection cable pair number
[supplier can replace with the local loop product](#)
 installation method (wall outlet (PiRa)/house MDF/connection cable pair)
 connection interface (A/F/G) at the exchange end
 connection cable pair number

[access network product](#)

replaced with another port product (port product type)
 port type (e.g. ADSL)
 port downstream rate (kbit/s)
 port upstream rate (kbit/s)
[technical connection identifier at the orderer \(e.g. DHCP option82\)](#)

[backbone network product](#)

implementation technology (ATM/Ethernet)
 POI identifier
 channel values (either VLAN or VPI/VCI must be specified)
 [VPI/VCI](#)
 [VLAN](#)

[service level agreement product](#)

code of the service level agreement product specified by the supplier

5.7 Information contents of the Change of Installation Time message

The Change of Installation Time message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

- supplier information identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

information on the change of installation time

- new confirmed installation date
- reason for the change
- [additional information](#)

5.8 Information contents of the Completion Notification message

The Completion Notification message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (e.g. sales order number)

order information

- framework agreement number
- group invoice identifier
- invoice reference
- availability enquiry identifier (supplier reference)
- connection identifier at the orderer
- customer name
- desired installation date
- delivery priority class (high)
- additional information

information in the order completion notification

- completion notification type (completed/cannot be installed)
- reason for rejection (mandatory if cannot be installed)
- connection identifier at the supplier
- actual installation date
- additional information

product information

- subscriber line product
 - replaced with the shared-use-of-the-local-loop product (yes/no)
 - installation charge
 - monthly charge
 - number of wires (2/4)
 - quality category (O quality, S.O quality)
 - subscriber line length (m)
 - customer end
 - installation address
 - installation method (wall outlet (PiRa)/house MDF/connection cable pair)
 - connection cable pair number (if the installation method above is connection cable pair)
 - drop cable pair number
 - installation contact person
 - name (end user/representative of the end user)
 - telephone number
 - e-mail address
 - exchange end
 - installation address
 - exchange identifier
 - connection interface (A/F/G) at the exchange end
 - connection cable pair number 1 (if the connection interface above is F)
 - connection cable pair number 2 (if 4-wire connection)
 - supplier can replace with the shared-use product
 - authorisation (authoriser name)
 - shared-use number
 - connection interface (A/B/C/D/E/F/G) at the exchange end

shared-use-of-the-local-loop product

- replaced with the subscriber line product (yes/no)
- installation charge
- monthly charge
- authorisation (authoriser name)

shared-use number
 subscriber line length (m)
 customer end

- installation contact person
 - name (end user/representative of the end user)
 - telephone number
 - e-mail address

 exchange end

- installation address
- exchange identifier
- connection interface (A/B/C/D/E/F/G) at the exchange end
- connection cable pair number
- supplier can replace with the local loop product
 - installation method (wall outlet (PiRa)/house MDF/connection cable pair)
 - connection interface (A/F/G) at the exchange end
 - connection cable pair number

access network product

replaced with another port product (port product type)
 installation charge
 monthly charge
 port type (e.g. ADSL)
 port downstream rate (kbit/s)
 port upstream rate (kbit/s)
 technical connection identifier at the orderer (e.g. DHCP option82)

backbone network product

installation charge
 monthly charge
 implementation technology (ATM/Ethernet)
 POI identifier
 channel values (either VLAN or VPI/VCI must be specified)

- VPI/VCI
- VLAN

service level agreement product

installation charge
 monthly charge
 code of the service level agreement product specified by the supplier

5.9 Information contents of the Modification Order message

The fields that are only mandatory in the Transfer Order are marked **in orange** in the Modification Order message. In other orders, the fields should be left blank.

The Modification Order message is used to convey the following information:

message header information

name (identifies the message type)
 message identifier (identifies the message)
 time stamp
 checksum

sender information

identifier (identifies the organisation)
 name (organisation name)

receiver information

identifier (identifies the organisation)
name (organisation name)

orderer information

identifier (identifies the organisation)
name (organisation name)
orderer reference (e.g. purchase order number)

supplier information

identifier (identifies the organisation)
name (organisation name)

change information

connection identifier at the supplier
customer name
desired installation date
additional information

transfer order

old installation address
new installation address

product information

subscriber line product (replaces the shared-use-of-the-local-loop product)
number of wires (2)
quality category (O quality, S.O quality)
installation method (wall outlet (PiRa)/house MDF/connection cable pair)
connection cable pair number (mandatory if the installation method above is connection cable pair)
installation contact person (end user/representative of the end user)
name
telephone number (mandatory if the installation method is wall outlet)
e-mail address

exchange end
connection interface (A/F/G) at the exchange end
connection cable pair number
connection cable pair number 2 (mandatory if 4-wire connection)
supplier can replace with the shared-use product (optional)
authorisation (authoriser name)
shared-use number
connection interface (A/B/C/D/E/F/G) at the exchange end

shared-use-of-the-local-loop product (replaces the subscriber line product)
authorisation (authoriser name)
shared-use number
installation contact person (end user/representative of the end user)
name
telephone number (mandatory if the installation method of the replacing product is wall outlet)
e-mail address

exchange end
connection interface (A/B/C/D/E/F/G) at the exchange end
connection cable pair number
supplier can replace with the local loop product (optional)
installation method (wall outlet (PiRa)/house MDF/connection cable pair)
connection interface (A/F/G) at the exchange end

connection cable pair number (mandatory if the installation method above is connection cable pair)

access network product (when selling local loop transmission capacity)

port type (e.g. xDSL or ADSL)

port downstream rate (kbit/s)

port upstream rate (kbit/s)

technical connection identifier at the orderer (optional, e.g. DHCP option82)

backbone network product (mandatory when ordering a bitstream product)

implementation technology (ATM/Ethernet)

POI identifier

channel values (either VLAN or VPI/VCI must be specified)

VPI/VCI

VLAN

service level agreement product

code of the service level agreement product specified by the supplier

5.10 Information contents of the Termination message

The Termination message is used to convey the following information:

message header information

name (identifies the message type)

message identifier (identifies the message)

time stamp

checksum

sender information

identifier (identifies the organisation)

name (organisation name)

receiver information

identifier (identifies the organisation)

name (organisation name)

orderer information

identifier (identifies the organisation)

name (organisation name)

orderer reference (e.g. purchase order number)

supplier information

identifier (identifies the organisation)

name (organisation name)

termination information

connection identifier at the supplier

desired disconnection date

additional information

5.11 Information contents of the Termination Cancellation message

The Termination Cancellation message is used to convey the following information:

message header information

name (identifies the message type)

message identifier (identifies the message)

time stamp
checksum

sender information
 identifier (identifies the organisation)
 name (organisation name)

receiver information
 identifier (identifies the organisation)
 name (organisation name)

orderer information
 identifier (identifies the organisation)
 name (organisation name)
 orderer reference (e.g. purchase order number)

supplier information
 identifier (identifies the organisation)
 name (organisation name)
 supplier reference (e.g. sales order number)

information on termination cancellation
 connection identifier at the supplier
 [additional information](#)

5.12 Information contents of the Termination Confirmation message

The Termination Confirmation message is used to convey the following information:

message header information
 name (identifies the message type)
 message identifier (identifies the message)
 time stamp
 checksum

sender information
 identifier (identifies the organisation)
 name (organisation name)

receiver information
 identifier (identifies the organisation)
 name (organisation name)

orderer information
 identifier (identifies the organisation)
 name (organisation name)
 orderer reference (e.g. purchase order number)

supplier information
 identifier (identifies the organisation)
 name (organisation name)

termination information
 connection identifier at the supplier
 desired disconnection date
 [additional information](#)

[information on termination confirmation](#)

confirmed disconnection date
[additional information](#)

5.13 Information contents of the Disconnection Confirmation message

The Disconnection Confirmation message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)

termination information

- connection identifier at the supplier
- desired disconnection date
- [additional information](#)

[information on termination confirmation](#)

- confirmed disconnection date
- [additional information](#)

information on disconnection confirmation

- disconnection date
- [additional information](#)

5.14 Information contents of the Previous Subscription Termination message

The Previous Subscription Termination message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

identifier (identifies the organisation)
name (organisation name)

orderer information

identifier (identifies the organisation)
name (organisation name)
orderer reference (e.g. purchase order number)

information on the surrendering telecommunications company

identifier (identifies the organisation)
name (organisation name)

information on the previous subscription termination

installation address

name of the terminating party (holder of the subscription)
agreement identifier of the Previous SO
[shared-use number](#)

termination date (when the Customer terminated the previous subscription)
[disconnection date \(when the previous subscription should be disconnected\)](#)

5.15 Information contents of the Notification message

The Notification message is used to convey the following information:

message header information

name (identifies the message type)
message identifier (identifies the message)
time stamp
checksum

sender information

identifier (identifies the organisation)
name (organisation name)

receiver information

identifier (identifies the organisation)
name (organisation name)

orderer information

identifier (identifies the organisation)
name (organisation name)
orderer reference (e.g. purchase order number)

information on the surrendering telecommunications company

identifier (identifies the organisation)
name (organisation name)
reference of the surrendering telecommunications company

information on the supplier of the new subscription

identifier (identifies the organisation)
name (organisation name)

information on the supplier of the previous subscription

identifier (identifies the organisation)
name (organisation name)

information on the previous subscription termination

installation address

name of the terminating party (holder of the subscription)

agreement identifier of the Previous SO

[shared-use number](#)

termination date (when the Customer terminated the previous subscription)

[disconnection date \(when the previous subscription should be disconnected\)](#)

Notification information

termination (approved/rejected)

[reason for rejection](#) (mandatory if rejected)

connection identifier at the supplier

5.16 Information contents of the Exchange Order message

The Exchange Order message is used to convey the following information:

message header information

name (identifies the message type)

message identifier (identifies the message)

time stamp

checksum

sender information

identifier (identifies the organisation)

name (organisation name)

receiver information

identifier (identifies the organisation)

name (organisation name)

orderer information

identifier (identifies the organisation)

name (organisation name)

orderer reference (e.g. purchase order number)

supplier information

identifier (identifies the organisation)

name (organisation name)

information on the surrendering telecommunications company

identifier (identifies the organisation)

name (organisation name)

reference of the surrendering telecommunications company

exchange order information

[previous subscription disconnected \(yes/no\)](#)

connection identifier at the supplier

customer name

order information

[framework agreement number](#)

[group invoice identifier](#)

[invoice reference](#)

[availability enquiry identifier \(supplier reference\)](#)

connection identifier at the orderer

[desired installation date](#)

[delivery priority class \(high\)](#)

additional information

product information

subscriber line product

number of wires (2/4)

quality category (O quality, S.O quality)

customer end

installation address

installation method (wall outlet (PiRa)/house MDF/connection cable pair)

[connection cable pair number](#) (if the installation method above is connection cable pair)

installation contact person (end user/representative of the end user)

name

[telephone number](#) (mandatory if the installation method is wall outlet)

[e-mail address](#)

exchange end

connection interface (A/F/G) at the exchange end

[connection cable pair number 1](#) (if the connection interface above is F)

[connection cable pair number 2](#) (if 4-wire connection)

[supplier can replace with the shared-use product](#)

authorisation (authoriser name)

shared-use number

connection interface (A/B/C/D/E/F/G) at the exchange end

shared-use-of-the-local-loop product

authorisation (authoriser name)

shared-use number

customer end

installation contact person (end user/representative of the end user)

name

[telephone number](#) (mandatory if the installation method of the replacing product is wall outlet)

[e-mail address](#)

exchange end

connection interface (A/B/C/D/E/F/G) at the exchange end

connection cable pair number

[supplier can replace with the local loop product](#)

installation method (wall outlet (PiRa)/house MDF/connection cable pair)

connection interface (A/F/G) at the exchange end

connection cable pair number

access network product

port type (e.g. xDSL or ADSL)

port downstream rate (kbit/s)

port upstream rate (kbit/s)

[technical connection identifier at the orderer \(e.g. DHCP option82\)](#)

backbone network product

implementation technology (ATM/Ethernet)

POI identifier

channel values (either VLAN or VPI/VCI must be specified)

[VPI/VCI](#)

[VLAN](#)

service level agreement product

code of the service level agreement product specified by the supplier

5.17 Information contents of the Invoice message

The Invoice message is used to convey the information described below. Note that the Invoiced Product Information field may appear several times in an invoice.

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (e.g. purchase order number)

supplier information

- identifier (identifies the organisation)
- name (organisation name)

invoiced product information

product information

- invoiced product category (e.g. access network product or backbone network product)
- invoiced product
- [connection rate](#)
- connection identifier at the supplier
- connection identifier at the orderer
- installation address at the customer end
- installation address at the exchange end

invoicing information

- invoice number
- [framework agreement number](#)
- group invoice identifier
- invoice reference
- quantity of the invoiced product
- product unit price excluding VAT
- invoicing period
- total product price excluding VAT

additional information

- customer name
- [order date](#) (mandatory for a single invoice only)
- [installation date](#) (mandatory for a single invoice only)
- [orderer reference information for the connection](#)
- [additional information](#)

5.18 Information contents of the Fault Notification message

The Fault Notification message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (fault ticket number at the orderer)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- connection identifier at the supplier

contact person for fault clearance

at the Orderer

- name
- telephone number
- e-mail address

at the Customer

- name
- telephone number
- e-mail address

fault description

- fault type (disruptions/disrupted)
- fault description (fault as reported by the customer and limitation actions taken by the orderer)
- start time
- has the connection ever been operational (yes/no)
- end time (if the fault has not yet been cleared, the field is empty)
- additional information

identifiers and product information

- installation address at the customer end
- technical connection identifier at the orderer (e.g. DHCP option82)
- POI identifier
- channel values (either VLAN or VPI/VCI must be specified)
 - VPI/VCI
 - VLAN
- code of the service level agreement product specified by the supplier

5.19 Information contents of the Process Confirmation message

The Process Confirmation message is used to convey the following information:

message header information

- name (identifies the message type)
- message identifier (identifies the message)
- time stamp
- checksum

sender information

- identifier (identifies the organisation)
- name (organisation name)

receiver information

- identifier (identifies the organisation)
- name (organisation name)

orderer information

- identifier (identifies the organisation)
- name (organisation name)
- orderer reference (fault ticket number at the Orderer)

supplier information

- identifier (identifies the organisation)
- name (organisation name)
- supplier reference (fault ticket number at the Supplier)

contact person for fault clearance

- at the Supplier
 - name
 - telephone number
 - e-mail address
- at the Orderer
 - name
 - telephone number
 - e-mail address
- at the Customer
 - name
 - telephone number
 - e-mail address

fault description

- fault type (disruption/disrupted)
- fault description (fault as reported by the customer and limitation actions taken by the orderer)
- start time
- has the connection ever been operational (yes/no)
- end time (if the fault has not yet been cleared, the field is empty)
- additional information

identifiers and product information

- installation address at the customer end
- technical connection identifier at the orderer (e.g. DHCP option82)
- POI identifier
- channel values (either VLAN or VPI/VCI must be specified)
 - VPI/VCI
 - VLAN

[code of the service level agreement product specified by the supplier](#)

information on the process confirmation

estimated fault clearance time

[reason for the fault](#)

[additional information](#)

5.20 Information contents of the Supplement to Fault Notification or Status Change message

message header information

name (identifies the message type)

message identifier (identifies the message)

time stamp

checksum

sender information

identifier (identifies the organisation)

name (organisation name)

receiver information

identifier (identifies the organisation)

name (organisation name)

orderer information

identifier (identifies the organisation)

name (organisation name)

orderer reference (fault ticket number at the Orderer)

supplier information

identifier (identifies the organisation)

name (organisation name)

supplier reference (fault ticket number at the Supplier)

contact person for fault clearance

at the Supplier

name

telephone number

e-mail address

at the Orderer

name

telephone number

e-mail address

at the Customer

name

[telephone number](#)

[e-mail address](#)

fault description

fault type (disruption/disrupted)

fault description (fault as reported by the customer and limitation actions taken by the orderer)

start time

has the connection ever been operational (yes/no)

[end time](#) (if the fault has not yet been cleared, the field is empty)

[additional information](#)

identifiers and product information

installation address at the customer end
 technical connection identifier at the orderer (e.g. DHCP option82)
 POI identifier
 channel values (either VLAN or VPI/VCI must be specified)
 VPI/VCI
 VLAN
 code of the service level agreement product specified by the supplier

information on the process confirmation
 estimated fault clearance time
 fault description
 additional information

5.21 Information contents of the Fault Clearance Completion Notification message

message header information

name (identifies the message type)
 message identifier (identifies the message)
 time stamp
 checksum

sender information

identifier (identifies the organisation)
 name (organisation name)

receiver information

identifier (identifies the organisation)
 name (organisation name)

orderer information

identifier (identifies the organisation)
 name (organisation name)
 orderer reference (fault ticket number at the Orderer)

supplier information

identifier (identifies the organisation)
 name (organisation name)
 supplier reference (fault ticket number at the Supplier)

contact person for fault clearance

at the Supplier
 name
 telephone number
 e-mail address
 at the Orderer
 name
 telephone number
 e-mail address
 at the Customer
 name
 telephone number
 e-mail address

fault description

fault type (disruption/disrupted)
 fault description (fault as reported by the customer and limitation actions taken by the orderer)
 start time

has the connection ever been operational (yes/no)
end time (if the fault has not yet been cleared, the field is empty)
additional information

identifiers and product information

installation address at the customer end
technical connection identifier at the orderer (e.g. DHCP option82)
POI identifier
channel values (either VLAN or VPI/VCI must be specified)
VPI/VCI
VLAN
code of the service level agreement product specified by the supplier

information on the process confirmation

estimated fault clearance time
fault description
additional information

fault clearance information

fault cleared (cleared/no fault)
service recovery time (EET)
fault clearance description

6 DATA SPECIFICATIONS OF MESSAGE FIELDS

The specifications of data elements and data types below describe the format of the data that is transferred at the interface between operators' systems. These specifications should not be mixed up with the data format used when displaying information to the user in the user interface of an operator's system.

Example: The rate of the ADSL product can be presented in the format 2M/512k in the user interface of the operator's information system. At the interface between the systems, this information is presented using two data elements in accordance with the specifications below: *Downstream rate = 2048* and *Upstream rate = 512*.

When creating the data specifications below, the objective was to fragment the data into such elements that the system receiving the data need not fragment data elements any more.

Data element name	Data type or structure	Description
Time stamp	String(22)	YYYY-MM-DD HH:MM:SS+ZN where <ul style="list-style-type: none"> • YYYY is year • MM is month • DD is day • HH is hour • MM is minutes • SS is seconds • ZN is time zone (02 in Finland) DD and HH are separated by a blank. SS and ZN are separated by a plus sign
Installation address (at the customer or exchange end)	Address + Qualifier of the installation address	Installation address for the connection
Qualifier of the installation address	String(40)	E.g. <i>3rd floor, machine room</i>
Installation date	Date	
Installation method (customer end)	String(20)	wall outlet house MDF connection cable pair
Person's name (e.g. the name of the installation contact person or the terminating party)	String(30)	
Apartment	String(4)	
Reason for rejection	String(256)	
Disconnection date	Date	
Termination	String(10)	Accepted Rejected
Termination date	Date	
Number of wires	Integer(1)	2 4
Street name	String(30)	
Street address	Street name + Building number + Staircase + Apartment	
Exchange identifier	String(20)	
Connection interface at the exchange end	String(5)	A B C D E F G
Fault clearance description	String(1000)	
Replaced with the subscriber line product	String(5)	Y N

Replaced with the shared-use-of-the-local-loop product	String(5)	Y N
Replaced with another port product	String(20)	See Port type
Monthly charge	Float	Installation charge in euros
Installation charge	Float	Installation charge in euros
Quality category (subscriber line)	String(10)	O. S.O.
Invoice number	String(20)	
Invoiced product	String(30)	
Invoiced product category	String(30)	
Quantity of the invoiced product	String(20)	
Invoicing period	Integer(4)	Length of the invoicing period in days
Invoice reference	String(20)	
Additional information	String(1000)	
Reference of the Surrendering telecommunications company	String(15)	
Reason for the change	String(1000)	
POI identifier	String(20)	Identifies the point of interconnection
Name (organisation name)	String(20)	Name of the Sender, Receiver, Orderer, Supplier or Surrendering telecommunications company.
Name (identifies the message type in the message header information field)	String(50)	Notification Disconnection confirmation Termination Termination cancellation Termination confirmation Fault clearance completion notification Process confirmation Invoice Change of installation time Modification order Cancellation Availability enquiry Availability enquiry response Order Order confirmation Exchange order Completion notification Previous subscription termination Reception acknowledgement Supplement to fault notification or status change Fault notification
Has the connection ever been operational	String(5)	Y N
Address	Street address + Postal code + Post office	
Service recovery time		
Port downstream rate	Integer(10)	Rate in kilobits per second; 1Mb/s

		= 1024kb/s
Port upstream rate	Integer(10)	Rate in kilobits per second; 1Mb/s = 1024kb/s
Port type	String(20)	xDSL ADSL ADSL+ ADSL2 ADSL2+ ADSL2++ ISDN G.SHDSL VDSL VDSL2
Postal code	String(5)	
Post office	String(30)	
Telephone number	String(16)	Telephone number in the international format, e.g. +3589xxxxxx
Staircase	String(4)	Note! Can be e.g. ÖÖ
Shared-use number	String(16)	See Telephone number
Framework agreement number	String(20)	
Group invoice identifier	String(20)	
Availability	String(20)	can be delivered cannot be delivered
Message identifier	String(20)	Identifier of the message originator + running number
E-mail address	String(80)	
Drop cable pair number	String(10)	
Building number	String(10)	Note! Can be e.g. 3-5.
Offer identifier	String(15)	Corresponds to the <i>supplier's order number</i> in the availability enquiry.
Checksum	String()	Checksum value in hexadecimal notation
Subscriber line length	Integer(6)	Length of the subscriber line in metres
Orderer reference	String(15)	E.g. Orderer's purchase order number or fault ticket number
Order date	Date	
Code of the service level agreement specified by the supplier	String(20)	
Supplier reference	String(15)	E.g. Supplier's sales order number or fault ticket number
Delivery priority class	String(10)	Normal High
Delivery time	Integer	Delivery time in calendar days
Desired installation date	Date	
Desired disconnection date	Date	
Actual installation date	Date	
Implementation technology	String(10)	ATM Ethernet
Identifier (identifies the organisation)	String(10)	
Total product price excluding VAT	Float	Price in euros
Product unit price excluding VAT	Float	Price in euros
New installation address	See Installation address	
New confirmed installation date	Date	
Confirmed installation date	Date	
Confirmed disconnection	Date	

date		
Confirmation type	String(10)	Accepted Rejected
Authorisation	String(30)	Authorisation from the holder of the telephone subscription for shared use of the local loop. This field contains the holder, i.e. the name of the signatory in format <i>First name Last name</i>
Old installation address	See Installation address	
Previous subscription disconnected	String(5)	Y N
Agreement identifier of the Previous SO	String(20)	
Response type	String(10)	Accepted Rejected
VCI value	Integer(16)	ATM VCI
Fault cleared	String(10)	Cleared No fault
Fault description		
Fault type		Disruption Disrupted
Reason for the fault	String(1000)	
VLAN identifier	Integer(5)	Ethernet VLAN identifier
VPI value	Integer(12)	ATM VPI
Connection cable pair number	String(10)	
Connection rate	String(20)	Port downstream rate + Port upstream rate
Technical connection identifier (given by the Orderer or the Supplier)	String(128)	The maximum length of the technical identifier given by the Orderer is 32 characters, and the maximum length of the technical identifier given by the Supplier is 128 characters.
Connection identifier (at the Orderer or at the Supplier)	String(20)	
Contact person information (e.g. contact person for installation or fault clearance)	Person's name + Telephone number + E-mail address	

7 APPENDICES

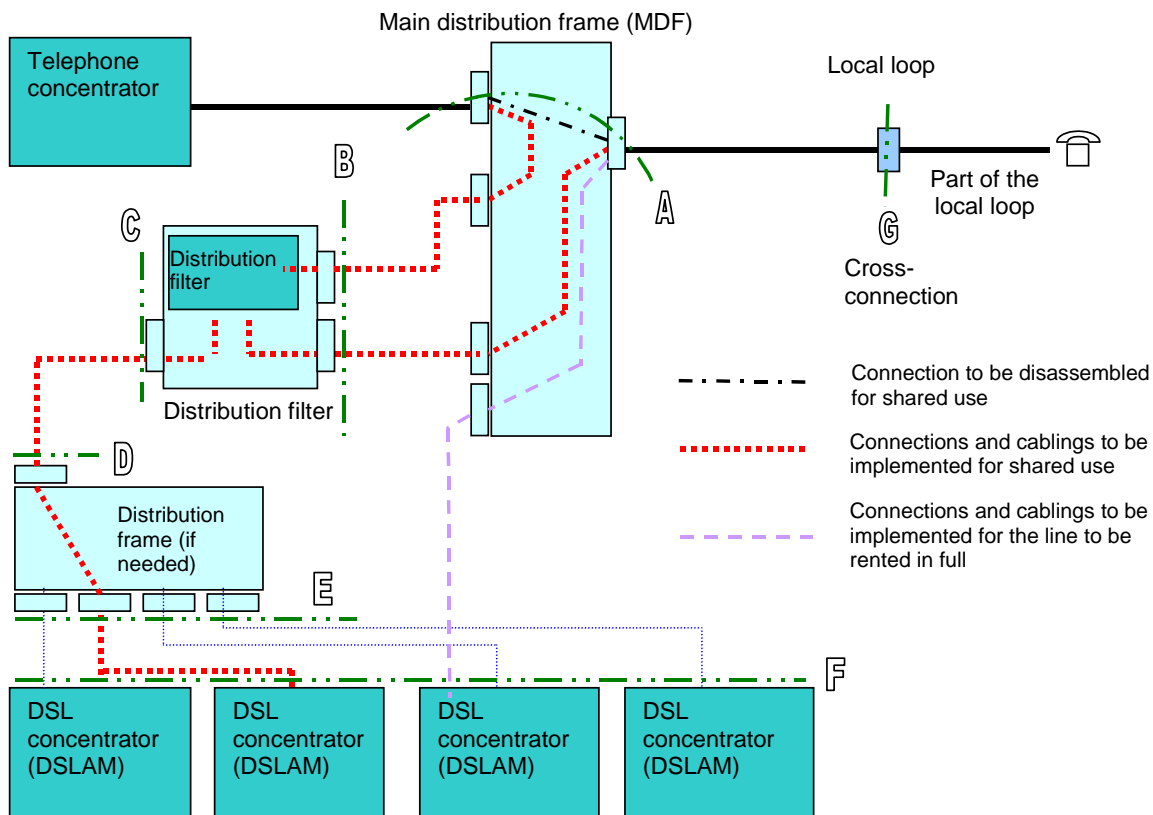
7.1 Appendix 1: List of abbreviations

ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronous Transfer Mode
DHCP	Dynamic Host Configuration Protocol
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
G.SHDSL	Symmetric DSL technology that conforms to the ITU-T G.991.2 standard
MDF	Main Distribution Frame
PiRa	Wall outlet
SO	Service operator
SLA	Service Level Agreement
LNA	Local Numbering Area
VCI	Virtual Circuit Identifier
VDSL	Very-High-Data-Rate Digital Subscriber Line
VLAN	Virtual Local Area Network
NO	Network operator
VPI	Virtual Path Identifier
WLAN	Wireless Local Area Network
xDSL	any DSL subscription or port

7.2 Appendix 2: Glossary of terms

Customer	A user who has concluded an agreement with a telecommunications company (Orderer) on using a communications service and to whom the service operator supplies a broadband subscription. In this report, the customer refers to both consumer customers and corporate customers.
Bitstream	Bitstream is used to refer to the two-way wholesale transmission service which is offered by the network operator to the service operator and which is located between the subscriber's and the service operator's access point. In a bitstream-based service, the service operator can provide Internet service to its own customers without having its own equipment to enhance the local loop transmission capacity.
Orderer	A telecommunications company that carries out an availability enquiry, places an order or a modification order or serves a notice of termination to the Supplier. An Orderer can be a network operator or a service operator.
Supplier	A telecommunications company that provides a connection or responds to an availability enquiry.
Previous service operator (SO)	The Orderer of the subscription to be terminated in an exchange order, i.e. the Surrendering telecommunications company.

7.3 Appendix 3: Connection interfaces at the exchange end



Interfaces for unbundled access to the local loop

Alternative interfaces A, B, C, D, E, F and G are marked in the figure above. The Regulation of the European Parliament and of the European Council on unbundled access to the local loop (2887/2000) requires that at least the interfaces A and G be provided. When renting the local loop for shared use, other interfaces, such as C and E, can be offered as the need arises.

Source: FICORA Recommendation 304/2005 S on the procedures related to renting local loops, local loop transmission capacity and equipment facilities.

7.4 Appendix 4: Example of the invoice line contents of an electronic invoice

Name	Single/ periodic invoice	Description
Supplier	single and periodic	<i>Name of the invoicing company</i>
Orderer	periodic and single	<i>Name of the orderer</i>
Invoiced product	periodic and single	<i>Product to be invoiced for the connection; individual components should be specified, e.g. copper and xDSL port</i>
Rate	periodic and single	<i>Connection rate</i>
Connection identifier at the supplier	single and periodic	<i>Supplier's connection identifier / agreement identifier</i>
Connection identifier at the orderer	periodic and single	<i>Orderer's connection identifier / agreement number</i>
End customer name	periodic and single	<i>End customer for the connection</i>
Installation address at the A and B end	periodic and single	<i>Installation addresses at the A and B end of the connection</i>
Postal code and municipality at the A and B end	periodic and single	<i>Postal code and municipality at the A and B end of the connection</i>
Invoicing period	single and periodic	<i>Invoicing period to be invoiced, time span</i>
Invoice number	single and periodic	<i>Invoice number given by the invoicing party</i>
Group invoice identifier	single and periodic	<i>Grouping of invoices into different groups, such as broadband services, capacity services, etc.</i>
Order date	single	<i>Date when the connection was ordered</i>
Installation date	single	<i>Date when the connection was installed</i>
Quantity of the invoiced product	periodic and single	<i>Quantities of the products to be invoiced for the connection</i>
Product unit price excluding VAT	periodic and single	<i>Unit price excluding VAT of the product to be invoiced for the connection</i>
Total product price excluding VAT	periodic and single	<i>Total price excluding VAT of the product to be invoiced for the connection</i>
Orderer reference information for the connection	periodic and single	<i>Reference information provided by the orderer for the connection</i>
Invoice reference	periodic and single	<i>Reference information provided by the orderer for the invoice, such as department, person, etc.</i>