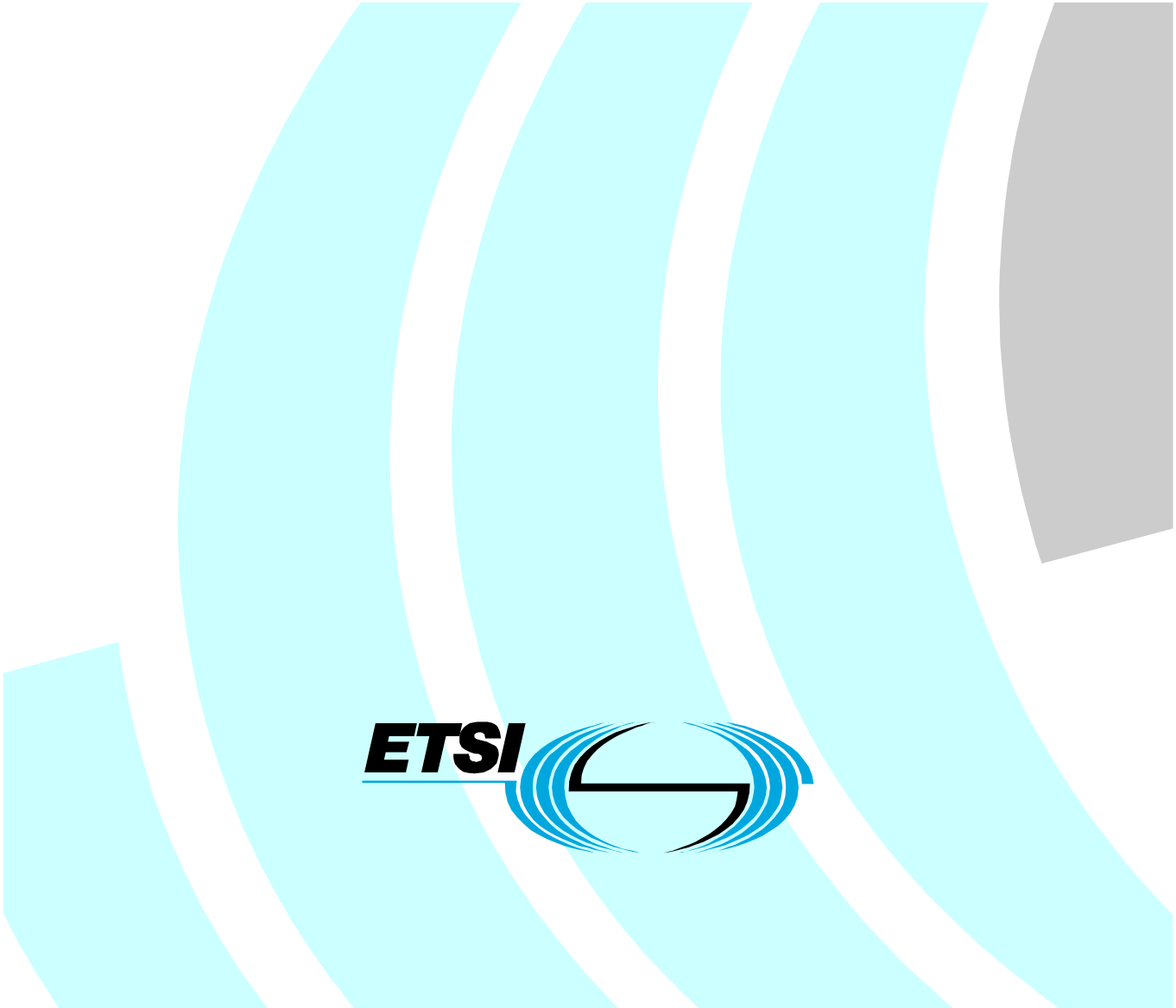
ETSI TR 102 214 V1.1.1 (2003-05)

Technical Report

Services and Protocols for Advanced Networks (SPAN); Result of the PNOs and Equipment Manufacturers questionnaires for identification of Equipment Unit



Reference
DTR/SPAN-150002

Keywords
equipment practice, ID

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, send your comment to:
editor@etsi.org

Copyright Notification

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

All published ETSI deliverables shall include information which directs the reader to the above source of information.

Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

Introduction

Public Network Operators (PNOs) and telecom equipment manufacturers have a common interest in the area of the Identification of Telecommunication Equipment. This common interest stems from the fact that equipment is the subject of numerous interactions between these business entities. In order to improve the understanding and exchange of information needed in this area, ETSI TC SPAN15 decided to conduct a survey within its membership. This survey was implemented by means of two questionnaires: one aimed at the PNOs and one aimed at the manufacturers.

The present document contains the results of this survey. Clause 4 lists the answers given by PNOs; clause 5 lists the answers given by manufacturers. The two questionnaires were developed by different entities and use different terminologies. Therefore it was needed to construct a cross-reference table which maps the terminology from both questionnaires. This table is provided in clause 6. The original questionnaires are given in the annexes A and B.

1 Scope

The present document is the result of a survey which was conducted in the fourth quarter of 2002 to evaluate and list the information needed by the PNOs and Manufacturers regarding Equipment Identification.

2 References

For the purposes of this Technical Report (TR) the following references apply:

[1] ETSI TS 102 209: "Services and Protocols for Advanced Networks (SPAN); Telecommunication Equipment Identification".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A	Additional
EI	Equipment Identity
MIB	Management Information Base
NR	Not Requested
PNO(s)	Public Network Operator(s)
R	Requested
SDoC	Suppliers Declaration of Conformity

4 PNOs' results

The answers given by PNOs are shown in table 1.

Table 1: PNOs' results

Description of equipment information needed by PNO	FT	BT	TI	B	T
1) Manufacturer's name: The Manufacturer's name responsible for the assembly, construction, and testing of the equipment unit	R	R	R	R	R
2) Manufacturer part number: The Manufacturer's part number that is physically stamped or marked on the equipment unit	R	R	R	R	R
3) Manufacturer's equipment version number: This is in regards to the hardware version. Also referred to as series, release, or issue and is associated to the part number. Used to identify the assembly and wiring processes used to construct the equipment unit (physically stamped on the equipment unit)	A	R	R	R	R
4) Manufacturing Ordering Code: Reference the Manufacturer's recommended or preferred equipment ordering codes (normally not stamped on the equipment). This is a commercial type of code	A	A	A	A	A
5) Equipment tracking: The EI should provide a single source of information for identifying Manufacturer's equipment version	R	R	R	R	A
6) Port or circuit rate: Identify the all the bit rates, speed, or other special engineering features associated with the equipment unit	NR	R	R	R	R
7) Physical dimensions: Identify the metric length, height, width and shape of the equipment unit	A	R	R	R	R
8) Physical description: Describe the type of assets, and if the equipment unit is a plug-in, plug-on, mounting, shelf, bay, rack, cabinet, etc.	A	R	R	R	R
9) Physical weight: Provide the metric weight of the unit (less shipping container) > (this is for human and/or structural limit)	A	R	R	A	R
10) Electrical requirements: Reference the manufacturers specifications for current type, cycles per second, voltage, power consumption, fusing requirements, etc.	A	R	R	R	R

Description of equipment information needed by PNO	FT	BT	TI	B	T
11) Alarm features: Reference the Manufacturer's recommended specifications for alarming equipment units	A	A	R	A	R
12) Testing information: Reference the Manufacturer's specifications for testing each equipment unit or item	A	A	A	A	R
13) Hazardous materials: Alert the PNO that there is a Manufacturers hazardous material warning	A	R	A	R	R
14) Downloadable software feature: This would identify that the equipment unit is capable of receiving down loadable software from an external source	R	R	A	R	R
15) Equipment slot requirements: Specify the quantity of slots required to install the equipment unit	A	R	R	R	R
16) Equipment slot locations: Specify the slot locations on the shelf where specific equipment can be mounted	A	R	R	R	R
17) Maximum allowable quantities: Identify how many shelves, magazines, etc. can be equipped in a cabinet, bay or rack. (This is different than circuit capacity)	A	R	R	R	R
18) Total quantity of equipment slots: Identify the total number of slots being provided by the equipment mounting	A	R	R	A	R
19) System information: How many equipment units and shelves are required to initiate a system (i.e. DBM2000 - one shelf, Titan 5500-multiple shelves, etc.). NB: a system is beyond the scope of this work item	NR	R	R	A	R
20) Installation environmental: Identifies acceptable conditions for equipment installation application (exterior, interior, dry, wet, dust free, etc.)	NR	R	A	A	R
21) Equipment installation: Identifies if the equipment is designed for pole mounts, ground level, cabinet, etc. installations	A	R	A	A	R
22) Installation, wiring and cabling: Reference Manufacturer's recommended wiring and cross-connects for the equipment. Examples are coaxial cabling fiber-in/fiber-out, distributing frame connections, etc.	A	A	R	A	R
23) Product description: A brief description of the equipment unit (i.e. power, alarm, interface, etc.	A	R	R	R	R
24) Equipment function or features: Engineering and design information that describes the specific roles, functions, or multi-functions of the equipment unit. Examples are PDH or SDH multiplexing, connectors, etc.	A	R	R	R	R
25) General application of Equipment Units: Identifies the general application or asset grouping for the equipment unit. Examples would be general power, transmission/transport, switching, access, etc.	A	A	A	A	R
26) Manufacturer reconditioned or repaired equipment: Reconditioned or repaired equipment should be "flag" by the Manufacturer before it is returned to the PNO. NB: this is not appropriate in the context of this work item	A	A	NR	NR	A
27) Technical Information: Reference to equipment and assembly drawings, circuit schematics, circuit description, etc.	NR	R	A	A	R
28) Information stability: Equipment unit relationship should be permanent/stable that means having the same part number and version	R	R	R	R	A
29) Change Management: Provide information needed to identify and track minor and major equipment changes made during the production of equipment	R	R	R	R	R
30) Interchangeable equipment: Provide the ability to easily identify interchangeable "like-for-like" equipment within the same manufacturer. This question is referring only to the equipment units. Across manufacturers could be considered	R	R	R	R	R
31) Compatible equipment: Identify the 'downward" compatibility of equipment within the same manufacturer. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa. This question is referring only to the equipment units. Across manufacturers could be considered	R	R	R	R	R
32) EI information should be human readable: The EI information should be in a human readable format that is in visible location when the equipment is in service. This question is related to the format or the support and therefore will be discussed in detail in the next WI	R	R	R	A	R
33) EI should be machine-readable (can be scanned): The EI information should be in a machine-readable format that can be scanned when the equipment is in service. This question is related to the format or the support and therefore will be discussed in detail in the next WI	R	R	R	A	A

Description of equipment information needed by PNO	FT	BT	TI	B	T
34) Management Information Base (MIB): EI information should be embedded with other manufacturer information that is stored within an equipment unit MIB. This question is related to the format or the support and therefore will be discussed in detail in the next WI	R	-	R	-	R
35) Application: A unique EI code is assigned to each equipment class (part number and version) with global uniqueness across equipment suppliers. Serial number is not taken into consideration	-	R	R	R	A
36) Benefits: which type of PNO process will benefit the information of the EI (see list below)					
36 a) Network Planning/Development	A	R	R	A	R
36 b) Network Provisioning	R	R	R	R	R
36 c) Network Inventory Management	R	R	R	R	R
36 d) Network Maintenance & Restoration	R	R	R	R	R
36 e) Network Monitoring	A	R	R	A	R
36 f) Acquisition: purchase of new equipment	R	R	R	R	-
37) Additional question: Manufacturer's equipment software version number. Also referred to as series, release, or issue and is possibly associated to the part number	R	R	R	R	-
38) Additional question: Compatible equipment software. Identify the 'downward" compatibility of equipment software. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa	R	R	R	R	-
39) Additional question: Manufacturer's equipment unit firmware version number. Also referred to as series, release, or issue and is possibly associated to the part number	R	R	R	R	-
40) Additional question: Compatible equipment unit firmware. Identify the 'downward" compatibility of equipment unit firmware. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa	R	R	R	R	-
41) Additional question: End of warranty period	R	A	A	R	
42) Additional question: End of Equipment supplier serviceability	R	A	A	A	
43) Additional question: Existence of MIB associated with an equipment and/or equipment unit Yes/No	R	A	A	A	
44) Additional question: Product Name given by the Equipment supplier	R	R	R	R	
45) Additional question: Is it still possible to order the equipment to the Equipment supplier	A	A	R	A	
46) Additional question: compliance with applicable standards (standard is independent of the country, i.e.: ITU, ETSI, etc.)	A	A	A	R	
47) Additional question: compliance with applicable certification (can be national, global, etc.)	A	A	A	R	

NOTE 1: "FT" stands for "France Telecom".
NOTE 2: "BT" stands for "British Telecom".
NOTE 3: "TI" stands for "Telecom Italia".
NOTE 4: "B" stands for "Belgacom".
NOTE 5: "T" stands for "Telefonica".
NOTE 6: "A" stands for "Additional" meaning the PNO considers this information to be optional.
NOTE 7: "NR" stands for "Not Requested" meaning this information is not requested by PNOs' organizations for internal or external use.
NOTE 8: "R" stands for "Requested" meaning the PNO requests that this information be available on the equipment unit and/or associated EI databases.
NOTE 9: Telefonica's answers were copied from the file they sent prior to the meeting according to the original questionnaire. All other operators replied taking into account information precision.
NOTE 10: The questions quoted as "Additional" were added during the December 2002 meeting.

5 Manufacturers' results

This clause lists the answers given by the manufacturers (table 2).

Table 2: Manufacturers' results

	Lucent	Siemens	Ericsson	Cisco
Identification of equipment				
1) Product number	R	R	R	R
2) Product revision	R	R	R	R
3) Product name	R	R	R	R
4) Product serial number	NR	R	R	R
5) Manufacturing time	NR	R	R	NR
6) Manufacturer	R	R	R	R
7) Certification marks	NR	R	A	R
8) Additional information				
Additional information				
9) Product structure	R	NR	R	NR
10) Traceability structure	NR	NR	R	NR
11) External product information	R	NR	A	NR
12) External serial number information	NR	NR	A	NR
13) Exemption indicator	NR	NR	A	NR
14) Scrap indicator	NR	NR	A	NR
15) Order number	NR	NR	R	NR
16) Shipment identification	NR	NR	R	NR
17) Shipment date	NR	NR	A	NR
18) Repair centre	NR	NR	A	NR
19) Customer	NR	NR	R	NR
20) Customer ID	NR	NR	R	NR
21) Customer location	NR	NR	A	NR
22) Site location ID	NR	NR	R	NR
23) Installation date	NR	NR	A	NR
24) Acceptance date	NR	NR	R	NR
25) Warranty	NR	NR	R	NR
26) Additional information				
Documents				
27) User guide	NR	NR	A	NR
28) Installation guide	NR	NR	A	NR
29) SDoC	NR	NR	A	NR
Added questions				
30) Added question: product description	R	A		
31) Added question: System name	R	A		

NOTE 1: "A" stands for "Additional" meaning the Manufacturer considers this information to be optional.
NOTE 2: "NR" stands for "Not Requested" meaning this information is not requested by the Manufacturer's organizations for internal or external use.
NOTE 3: "R" stands for "Requested" meaning the Manufacturer requests that this information be available on the equipment unit and/or associated EI databases.
NOTE 4: Cisco and Ericsson's answers were copied from the file they sent prior to the meeting. Lucent and Siemens filled the questionnaire with the assumption that the additional information is available but not required as part of the Equipment Identity (Q9-25).

6 Cross reference table

Since the questionnaires were developed by different entities, there was the need to map the meaning of each item. Table 3 is a cross reference table between the PNOs and Manufacturers interpretation.

Table 3: Cross reference table

Description of equipment information needed by PNO	Information needed by vendors
Manufacturer's name: The Manufacturer's name responsible for the assembly, construction, and testing of the equipment unit	**Manufacturer**
Manufacturer's equipment part number: The Manufacturer's part number that is physically stamped or marked on the equipment unit	**Product number**
Manufacturer's equipment version number: Also referred to as series, release, or issue and is associated to the part number. Used to identify the assembly and wiring processes used to construct the equipment unit (physically stamped on the equipment unit)	**Product revision**
Manufacturing ordering code: Reference the Manufacturer's recommended or preferred equipment ordering codes (normally not stamped on the equipment)	**Order number:** E.g. customer order number, purchase order number and/or delivery number can be used
Equipment tracking: The EI should provide a single source of information for identifying Manufacturer's equipment version (for example part number and equipment version number)	See product equipment version number
Port or circuit rate: Identify the all the bit rates, speed, or other special engineering features associated with the equipment unit	**Technical Specifications**
Physical dimensions: Identify the metric length, height, width and shape of the equipment unit	**Technical Specifications**
Physical description: Describe the type of assets, and if the equipment unit is a plug-in, plug-on, mounting, shelf, bay, rack, cabinet, etc.	**Product name (description)**
Physical weight: Provide the metric weight of the unit (less shipping container)	**Technical Specifications**
Electrical requirements: Reference the manufacturers specifications for current type, cycles per second, voltage, power consumption, fusing requirements, etc.	**Technical Specifications**
Alarm features: Reference the Manufacturer's recommended specifications for alarming equipment units	**Technical Specifications**
Testing information: Reference the Manufacturer's specifications for testing each equipment unit or item	**Technical Specifications**
Hazardous materials: Alert the PNO that there is a Manufacturers hazardous material warning and recommendations for product disposal	**SDoC and certification marks**
Downloadable software feature: This would identify that the equipment unit is capable of receiving down loadable software from an external source	**Product structure/Technical Specifications**
Equipment slot requirements: Specify the quantity of slots required to install the equipment unit	**Product structure/Technical Specifications**
Equipment slot locations: Specify the slot locations on an associated shelf where this equipment unit can be mounted	**Technical Specifications**
Maximum allowable quantities: Identify how many shelves, magazines, etc. can be equipped in a cabinet, bay or rack. (This is different than circuit capacity)	**Technical Specifications**
Total quantity of equipment slots: Identify the total number of slots being provided by the equipment mounting	**Technical Specifications**
System information: How many equipment units and shelves are required to initiate a system (i.e. DBM2000 - one shelf, Titan 5500-multiple shelves, etc.)	**Product structure**
Installation environmental: Identifies acceptable conditions for equipment installation application (exterior, interior, dry, wet, dust free, etc.)	**Installation guide**
Equipment installation: Identifies if the equipment is designed for pole mounts, ground level, cabinet, etc. installations	**Installation guide**

Description of equipment information needed by PNO	Information needed by vendors
Installation, wiring and cabling: Reference Manufacturer's recommended wiring and cross-connects for the equipment. Examples are coaxial cabling fiber-in/fiber-out, distributing frame connections, etc.	**Installation guide**
Product description: A brief description of the equipment unit (i.e. power, alarm, interface, etc.	**Product description**
Equipment function or features: Engineering and design information that describes the specific roles, functions, or multi-functions of the equipment unit. Examples are PDH or SDH multiplexing, connectors, etc.	**Technical Specifications**
General application of Equipment Units: Identifies the general application or asset grouping for the equipment unit. Examples would be general power, transmission/transport, switching, access, etc.	**See physical description**
Manufacturer reconditioned or repaired equipment: Reconditioned or repaired equipment should be 'flag' by the Manufacturer before it is returned to the PNO	**Repair centre** (note of repair could be a flag in database and/or mark on the product itself)
Technical information: Reference to equipment and assembly drawings, circuit schematics, circuit description, etc.	**Technical Specifications**
Information stability: EI to equipment unit relationship should be permanent and provide a single source of information to the PNO	
Change management: Provide information needed to identify and track minor and major equipment changes made during the production of equipment	**Product number and product version**
Interchangeable equipment: Provide the ability to easily identify interchangeable 'like-for-like' equipment	**Product structure/Technical Specification** (could be provided through manufacturer web page)
Compatible equipment: Identify the 'downward'' compatibility of equipment. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa	**Product number and product version** (defined in a product structure)
Management Information Base (MIB): EI information should be embedded with other manufacturer information that is stored within an equipment unit MIB	**Technical Specifications**
Manufacturer's equipment software version number: Also referred to as series, release, or issue and is possibly associated to the part number	**Product number and product version** (defined in a product structure)
Compatible equipment software: Identify the 'downward'' compatibility of equipment software. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa	**Product number and product version** (defined in a product structure)
Manufacturer's Equipment Unit firmware version number: Also referred to as series, release, or issue and is possibly associated to the part number	**Product number and product version** (defined in a product structure)
Compatible Equipment Unit firmware: Identify the 'downward'' compatibility of equipment unit firmware. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa	**Product number and product version** (defined in a product structure)
End of warranty period	**Warranty:** E.g. how long is the warranty period for the equipment
End of equipment supplier serviceability: Is it still possible to order the equipment to the Equipment supplier	**Technical Specifications (obsolete equipment)**
Existence of MIB: associated with an equipment and/or equipment unit Yes/No	**Technical Specifications**
Product name: given by the Equipment supplier	**Product name**
Compliance with applicable standards: (standard is independent of the country, i.e.: ITU, ETSI, etc.)	**SDoC:** Suppliers Declaration of Conformity (mandatory and/or voluntary) Certification marks: Symbols or marks showing compliance with regulations/standards **Technical Specification**
Compliance with applicable certification (can be national, global, etc.)	**SDoC:** Suppliers Declaration of Conformity (mandatory and/or voluntary) Certification marks: Symbols or marks showing compliance with regulations/standards **Technical Specification**

The following information from Manufacturer questionnaire was not possible to map with the PNO questionnaire but could be useful in understanding different needs of information from a manufacturer perspective.

Product serial number: A serial number that is unique, e.g. only used once
Manufacturing time: Could also be date or week
Product structure: E.g. structure showing the build up of a product, Product A consists of: - 2 pieces of Product B - 2 pieces of Product C
Traceability structure: E.g. structure showing the relation of product individuals based on a product structure Product A, 3152656 consists of - Product B, 3453678 - Product B, 3457564 - Product C, 7651637 - Product C, 7652791
External product information: Information like product number and revision that can be used instead of own marking. Mainly used when sourced products are used in own systems
External serial number information: E.g. information like electrical serial number, ethernet number, external serial number, software license etc. that can be attached to a product. External serial number is mainly used when sourced products are used in own system
Exemption indicator: Used to show if a product has been produced with some kind of exemptions from normal manufacturing procedure
Scrap indicator: Used to show if a product has been scrapped
Shipment identification: E.g. package id, used on shipment marking together with other needed shipment information
Shipment date
Repair centre
Customer
Customer ID
Customer location: E.g. actual country as a customer can be located in several countries
Site location ID: E.g. location for installed equipment
Installation date: Date when a installation is completed
Acceptance date: E.g. date when an installation has been accepted
System name
User guide

Annex A:
PNOs' questionnaire

This annex contains the questionnaire "PNO Equipment Information Needs and data requirements for Equipment Identities" which was sent on the 5th November 2002 to the ETSI SPAN NM exploder list. PNOs were asked to return the completed questionnaires to the Chair by the 30th November in order to discuss them during the ETSI SPAN NM meeting (December 3-5, 2002).

NOTE 1: In the following document "Manufacturer" and "Equipment Supplier" have the same meaning but not to be confused with "Vendor".

NOTE 2: This questionnaire refers to ETSI Work Item DTS/SPAN-00012 which was later re-numbered as DTS/SPAN-150001 (TS 102 209 [1]).

The letter of introduction sent to the PNOs and attached to the PNOs' questionnaire is as follow:

Information requirements For Equipment Identities

1) Purpose

This Questionnaire will be used to obtain the equipment information requirements and guidelines that are needed by Public Network Operators (PNOs) to develop an Equipment Identity (EI) for telecommunications equipment. This questionnaire is to provide information for steps 1 and 2 of the ETSI Work Item DTS/SPAN-150001 (TS 102 209 [1]).

"The scope for DTS/SPAN-150001 (TS 102 209 [1]) is to come up with a Technical Specification for Identification of Telecommunication Equipment. The TS is focused on both vendors and operators needs when exchanging information and/or internally in their processes if implemented. Information needs to be divided into required equipment identification and additional information (for example in the installation guide)". Working activities will follow:

- Step 1: Define the concept and usage of "Identification of Telecommunication Equipment"
- Step 2: Collect what are "needed information" from vendors and operators (December 02)
- Step 3: Define what information is Requested, Additional, or Not Requested based on step 2
- Step 4: Create a technical report based on steps 1 to 3

The Equipment Identity (EI) can provide an equipment-marking scheme that could be used at discretion of both PNOs and Manufacturers:

- PNOs
  - Internal applications and/or processes.
  - External communication between PNOs.
  - External communication between the PNOs and Equipment Manufacturers.
- Manufacturers (Telecommunication Equipment Manufacturers)
  - Internal applications and/or processes.
  - External communications between Manufacturers and the PNOs.

This questionnaire is being prepared by the PNOs and will focus on the "Requested Information" (needed) and "Additional Information" (optional) that is needed by the PNOs for equipment identification. A similar questionnaire is being prepared by Manufacturers and will also focus on the "Requested Information" (needed) and "Additional Information" needed by Manufacturers for equipment identification.

2) Goals

The goal of both questionnaires is to list and gather all the equipment information that is needed by PNOs and/or Manufacturers to efficiently process, manage, and exchange equipment information both internally and externally. This application of EI information or the extent to which it is used is at the discretion of each user. The information gathered by the two questionnaires will be melded into a comprehensive list of requirements for both PNOs and Manufacturers. The list of requirements will be reviewed, discussed, and compiled into a common document by the SPAN NM during the December 2002 meeting.

3) Scope

The two questionnaires, when combined into a single document, will list all of the Requested and Additional (optional) equipment information needed by PNOs and Manufacturers.

It is anticipated that the EI will be centrally developed by the SPAN NM group and this new identity or product will accurately represent the business needs of both Manufacturers and PNOs.

The future development of the actual EI will be in response to the PNO and Manufacturer input to the two questionnaires. However, this information will not be used to determine who will be responsible for the creation of an EI, how this information will formatted, or how it be applied to equipment.

4) The EI Universe

EI should be designed for the management and assignment of telecommunication equipment units being used by PNOs externally and within their network and access business units. The EI should support, facilitate, and function with their equipment ordering, warehousing, inventory tracking, investment recording, and service provisioning of network, access, and customer premise equipment. This equipment can be located in or on buildings, huts, vaults, poles, and/or customer premises. It should include all equipment types ordered by PNOs, and their clients, and used within the network and access infrastructure and client services. The complete questionnaire should represent the equipment information needs of planning, engineering, procurement, design, provisioning, fault management, warehousing, installation, investment tracking, service activation, and billing.

Ancillary products are not candidates for EI information. Ancillary products would include items such as cable racks, lighting fixtures, ladders, etc. and other materials that are not typically part of network, access, or services.

5) PNOs' Questionnaire (approved version)

SPAN NM will distribute this questionnaire to all participating PNOs. Each PNO/SPAN NM representative is expected to present the questionnaire to the appropriate representatives within their company and obtain a company position on each questionnaire item.

6) General

Questions concerning this PNO Questionnaire should be directed through the ETSI SPAN NM members participating to this PNOs' Questionnaire:

Pascale Pecha	Chair - SPAN NM
Christian Julien	ETSI Secretariat
Geoffrey Caryer	British Telecom
Daniele Fracasso	Telecom Italia
Michel Valette	France Telecom
Jérôme Crestel	France Telecom
Bengt Zdebel	Telia
Howard Weidinger	Telcordia Technologies

7) Methodology

Each PNO has agreed to use this questionnaire to solicit information from their business units and then prepare unified response (consensus) for their company. The attached questionnaire provides a starting point for the information gathering processes. Each PNO is encouraged to append additional "Requested" or "Additional" equipment information items to this list. The PNO should enter an "X" in the Excel column that best matches their equipment identification needs. Please select just one of the following choices for each equipment information item:

- **REQUESTED:** The PNO requests that this information be available on the equipment unit and/or associated EI databases.
- **ADDITIONAL:** The PNO considers this information to be optional.
- **NOT REQUESTED:** This information is not requested by PNO organizations for internal or external use.

Initial DEFINITIONS

Assignable equipment

Equipment units can be assigned and/or unassigned (partially or wholly) to any type of service, circuit, trunk, or facility being provided or used by the PNO. Assignable equipments may have single or multi-assignment capability. Assignable equipment is further defined as a unit of equipment that is an active component or element within the transmission or signalling path of circuits or channels designed through the service provisioning process to provide telecommunications services to the end customers. Assignable equipment includes:

- All hardwired (fixed), portable, plug-in, plug-on, hardwired mountings, shelves, and/or backplanes that provide telecommunications services (voice, data, image, video, IP, etc.) for sale, resale, or internal use by the PNO.
- Are used within the transport, transmission, message, and signalling paths operated and/or leased by a PNO.
- Any physical or logical telecommunications component that is and inventoried telecommunication item that can be administered by the PNO.

Equipment Identity (EI)

The EI information will be a user-friendly representation(s) of equipment and provide equipment information in a uniform, concise, function-oriented format that describes the purpose, requirements, form, and fit of each unit within its particular network application or environment. The EI are intended for both PNOs and Manufacturers. EI information should be useable in both manual and OSS environments and provide human and machine-readable information. EI information can provide or reference equipment features.

Equipment Units

An equipment unit is an assembly of components that are wired together to provide one or more specific functions with the network. Equipment units can be assignable or non-assignable. Typical equipment units are:

- Plug-in.
- Plug-on.
- Equipment mounted in relay racks, bays, or cabinets.

Equipment Unit and mountings

An equipment unit is an assembly of components that are wired together to provide one or more specific functions with the network. Equipment units can be assignable or non-assignable. Typical equipment mountings are:

- Relay racks, equipment bays, cabinets, etc.
- Magazines, shelves, modules, containers, etc.

Manufacturer

A business entity that assembles and constructs equipment units. Manufacturer functions would include the selling, reconditioning, remanufacturing, and/or repairing of equipment units for PNOs.

Manufacturer ordering code

A code that is assigned by a manufacturer or supplier for ordering purposes only. An ordering code can represent one or multiple items grouped together. Ordering codes are normally not stamped on the product.

Management Information Base (MIB)

MIB is a software feature embedded within the equipment unit by the Manufacturer. It provides specific information in a software format on the equipment unit that. The information contained in the MIB is determined by the Manufacturer and can be retrieved with proprietary interfaces.

Non-assignable equipment

Non-assignable equipment supports, but does not directly provide (partially or wholly) any type of customer or company service, circuit, trunk, or facility. Assignable equipment may have single or multi-assignment capability. Typical non-assignable equipment would be common equipment, jack panels, fuse equipment, shelves. This type of Equipment Identity (EI) would be used by the PNO for ordering and inventory.

Part number

A code that is developed and assigned to equipment units by the manufacturer. Part numbers are further described as:

a) Coding of arbitrary length and format that uniquely identifies a specific product line.

b) Coding that may contain some basic information on the purpose or function of the equipment unit.

c) Coding that is stamped or etched on each equipment unit.

d) Part numbers are **not** EAN 13.

e) Part numbers normally do **not** identify which version, issue, release number, etc, used to manufacture the equipment unit.

Plug-In

A plug-in as an item of electronic equipment which connects its circuit elements to other equipment, affects the operation of that equipment, and is considered to be replaceable or easily removed.

Mechanical characteristics: A plug-in is designed to be portable, easily removable, easily replaced, and not mounted to a frame, rack, bay, or other mounting. A plug-in may mount onto other equipment by sliding into a chassis, or rest on a shelf plate within a rack or frame. Small units that rest on top of cabinets, desks or tables may also be considered as plug-ins.

Electrical characteristics: A plug-in is dependent on another equipment to complete its function in an electrical circuit, and enhances or affects the operation of its base equipment. A plug-in may connect to other equipment by means of circuit connectors imprinted on the edge of a circuit board that mate to a chassis backplane connector. (These are sometimes referred to as "fingers" or "lands"); jacks, plugs, RS-232, or other wired connectors; eyelets, screw-down, or barrier terminals that accept spade clips or bare wire connections; spring contact devices or other mechanical connections that can be considered temporary connections).

NOTE: All the above criteria must be met to qualify a device as a plug-in. For example, a device that is mounted with screws, bolts, or other mechanical fasteners is considered to be permanently mounted, such as in the case of hardwired equipment, and is generally not considered to be a plug-in.

Plug-On

Plug-on equipment plugs onto a "plug-in" equipment units and is sometime called a "daughter board". A plug-on may complete a function of a plug-in or provide additional functions by hardware, software, or both. It is generally marked with, and ordered by, its own part number.

Public Network Operator (PNO)

A Public or private business entity that sells and/or resells telecommunication services to the public or other service providers. These services can include wireline and wireless networks that provide residential services, business services, data services, private line services, Internet services, and/or long distance services.

Updateable Firmware

Equipment units may rely on firmware updates. Firmware is linked closely with hardware.

Updateable Hardware

Telecommunication units can be multi-functional and rely on hardware updates.

Updateable Software

Telecommunication equipment units can be multi-functional and may rely on software updates (within predetermined parameters) to active internal features. Software updates are made from an external source such as floppy disks, tapes, cartridges, and compact disks, OSSs, etc.

Vendor

A business entity that sells equipment unit and/or services to PNOs, but does not manufacturer equipment units. Vendors sell and/or resell of equipment obtained from manufacturers or other PNOs.

Table A.1: PNOs' questionnaire template (was provided on Microsoft Excel)

Description of equipment information needed by PNO	Requested	Additional	Not Requested
Manufacturer's name: The Manufacturer's name responsible for the assembly, construction, and testing of the equipment unit			
Manufacturer's equipment part number: The Manufacturer's part number that is physically stamped or marked on the equipment unit			
Manufacturer's equipment version number: Also referred to as series, release, or issue and is associated to the part number. Used to identify the assembly and wiring processes used to construct the equipment unit (physically stamped on the equipment unit)			
Manufacturing ordering code: Reference the Manufacturer's recommended or preferred equipment ordering codes (normally not stamped on the equipment)			
Equipment tracking: The EI should provide a single source of information for identifying Manufacturer's equipment version (for example part number and equipment version number)			
Port or circuit rate: Identify the all the bit rates, speed, or other special engineering features associated with the equipment unit			
Physical dimensions: Identify the metric length, height, width and shape of the equipment unit			
Physical description: Describe the type of assets, and if the equipment unit is a plug-in, plug-on, mounting, shelf, bay, rack, cabinet, etc.			
Physical weight: Provide the metric weight of the unit (less shipping container)			
Electrical requirements: Reference the manufacturers specifications for current type, cycles per second, voltage, power consumption, fusing requirements, etc.			
Alarm features: Reference the Manufacturer's recommended specifications for alarming equipment units			
Testing information: Reference the Manufacturer's specifications for testing each equipment unit or item			
Hazardous materials: Alert the PNO that there is a Manufacturers hazardous material warning and recommendations for product disposal			
Downloadable software feature: This would identify that the equipment unit is capable of receiving down loadable software from an external source			
Equipment slot requirements: Specify the quantity of slots required to install the equipment unit			
Equipment slot locations: Specify the slot locations on an associated shelf where this equipment can be mounted			
Maximum allowable quantities: Identify how many shelves, magazines, etc. can be equipped in a cabinet, bay or rack. (This is different than circuit capacity)			
Total quantity of equipment slots: Identify the total number of slots being provided by the equipment mounting			
System information: How many equipment units and shelves are required to initiate a system (i.e. DBM2000 - one shelf, Titan 5500-multiple shelves, etc.)			
Installation environmental: Identifies acceptable conditions for equipment installation application (exterior, interior, dry, wet, dust free, etc.)			
Equipment installation: Identifies if the equipment is designed for pole mounts, ground level, cabinet, etc. installations			
Installation, wiring and cabling: Reference Manufacturer's recommended wiring and cross-connects for the equipment. Examples are coaxial cabling fiber-in/fiber-out, distributing frame connections, etc.			
Product description: A brief description of the equipment unit (i.e. power, alarm, interface, etc.			
Equipment function or features: Engineering and design information that describes the specific roles, functions, or multi-functions of the equipment unit. Examples are PDH or SDH multiplexing, connectors, etc.			
General application of Equipment Units: Identifies the general application or asset grouping for the equipment unit. Examples would be general power, transmission/transport, switching, access, etc.			

Description of equipment information needed by PNO	Requested	Additional	Not Requested
Manufacturer repaired or reconditioned equipment: Repaired or reconditioned equipment should be uniquely identified by the manufacturer before it is returned to the PNO. This identity would aid the PNO in tracking repaired and reconditioned equipment			
Technical information: Reference to equipment and assembly drawings, circuit schematics, circuit description, etc.			
Information stability: The relationship between the EI to Manufacturers part number with version number should be permanent and provide a single source of information to the PNO. This establishes a direct relationship between the Manufacturers part number with version number and the EI			
Change management: Provide information needed to identify and track minor and major equipment changes made during the production of equipment			
Interchangeable equipment: Provide the ability to easily identify interchangeable "like-for-like" equipment. Like-for-like means functionally identical, and implies there is no difference in current or prior equipment versions			
Compatible equipment: Identify the 'downward" compatibility of equipment. Downward is a single direction, and implies that only a newer version can be used to replace a prior version, and not vice versa			
EI information should be human readable: The EI information should be in a human readable format that is in visible location when the equipment is in service			
EI should be machine-readable (can be scanned): The EI information should be in a machine-readable format that can be scanned when the equipment is in service			
Management Information Base (MIB): EI information should be embedded with other manufacturer information that is stored within an equipment unit MIB			
Application: A unique EI code is assigned to each equipment unit			
Benefits: What type of PNO processes will benefit from EI information? (see items a) - f) below)			
a) Network Planning/Development			
b) Network Provisioning			
c) Network Inventory Management			
d) Network Maintenance & Restoration			
e) Network Monitoring			
f) Acquisition: purchase of new equipment			
Additional PNO requested or optional equipment information (if any)			
Additional PNO requested or optional equipment information (if any)			
Additional PNO requested or optional equipment information (if any)			
Additional PNO requested or optional equipment information (if any)			
Additional PNO requested or optional equipment information (if any)			

Annex B:
Manufacturers' questionnaire

This annex contains the questionnaire "Manufacturers Equipment Information Needs and data requirements for Equipment Identities" was sent on the 15th November 2002 to the ETSI SPAN NM exploder list. Manufacturers were asked to return the completed questionnaires to the Chair by the 30th November in order to discuss them during the ETSI SPAN NM meeting (December 3-5, 2002).

Similarly the following questionnaire was provided on excel sheet.

Table B.1: Manufacturers' questionnaire

	Requested	Additional	Not requested
Identification of equipment			
- Product number			
- Product revision			
- Product name			
- Product serial number			
- Manufacturing time			
- Manufacturer			
- Certification marks			
- Additional information			
Additional information			
- Product structure			
- Traceability structure			
- External product information			
- External serial number information			
- Exemption indicator			
- Scrap indicator			
- Order number			
- Shipment identification			
- Shipment date			
- Repair centre			
- Customer			
- Customer ID			
- Customer location			
- Site location ID			
- Installation date			
- Acceptance date			
- Warranty			
- Additional information			
Documents			
- User guide			
- Installation guide			
- SDoC			
- Additional information			

Notes provided with the questionnaire:

Order number: e.g. customer order number, purchase order number and/or delivery number can be used

Warranty: e.g. how long is the warranty period for the equipment

Certification marks: symbols or marks showing compliance with regulations/standards

Product serial number: a serial number that is unique, e.g. only used once

Manufacturing time: could also be date or week

Product structure: e.g. structure showing the build up of a product,
Product A consists of:

- 2 pieces of Product B;
- 2 pieces of Product C.

Traceability structure: e.g. structure showing the relation of product individuals based on a product structure,
Product A, 3152656 consists of:

- Product B, 3453678
- Product B, 3457564
- Product C, 7651637
- Product C, 7652791

External product information: information like product number and revision that can be used instead of own marking

NOTE: Mainly used when sourced products are used in own systems.

External serial number information: e.g. information like electrical serial number, ethernet number, external serial number, software license etc. that can be attached to a product

NOTE: External serial number is mainly used when sourced products are used in own system.

Exemption indicator: used to show if a product has been produced with some kind of exemptions from normal manufacturing procedure

Scrap indicator: used to show if a product has been scrapped

Shipment identification: e.g. package id, used on shipment marking together with other needed shipment information

Customer location: e.g. actual country as a customer can be located in several countries

Site location ID: e.g. location for installed equipment

Installation date: date when an installation is completed

Acceptance date: e.g. date when an installation has been accepted

History

Document history		
V1.1.1	May 2003	Publication