

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



TSG-SA WG5 (Telecom Management) Status Report

Reported by
Adrian Zoicas (MCC)
on behalf of the
TSG-SA WG5 Management Team

A GLOBAL INITIATIVE

SA5 Documents provided to this Plenary

NUMBER	TITLE
SP-020010	Status report from SA WG5 to SA#15
SP-020011	Rel-5 draft TR 32.802 v104 (User Equipment Management UEM feasibility study), in co-operation with T2 - for the 2 nd consecutive time for Information
SP-020012	Rel-5 draft TS 32.140 v100 (Subscription Management) - for Information
SP-020013	3 Rel-5 CR 32.101 (3G Telecom Management principles and high level requirements)
SP-020014	2 Rel-5 CR 32.102 (3G Telecom Management Architecture)
SP-020015	Rel-4 CR 32.111-3 (Fault Management; Part 3: Alarm Integration Reference Point: CORBA SS) Correction of erroneous and addition of missing mapping tables
SP-020016	5 Rel-4 & Rel-5 CR 32.200 (Charging principles)
SP-020017	Rel-4 CR 32.235 (Charging data description for application services) Corrections for consistency with 23.140 (MMS)
SP-020018	Rel-4 CR 32.304 (Configuration Management; Notification Integration Reference Point: CMIP SS) Correction of invalid ASN.1 definitions
SP-020019	2 Rel-4 CR 32.603 (Basic configuration management IRP: CORBA SS)
SP-020020	Rel-4 CR 32.622 (Configuration Management; Generic network resources IRP: NRM) Addition of managedElementType value for GSM Radio Access Network support
SP-020021	3 Rel-4 CR 32.624 (Configuration Management; Generic network resources: IRP CMIP SS)
SP-020022	4 R99 & Rel-4 CR 32.005 & 32.205 (CS charging), 32.015 & 32.215 (PS charging) Addition of CAMEL phase 3 extensions in SMS-MO CDR
SP-020024	2 R99 & Rel-4 CR 32.015 & 32.215 (PS charging) Addition of "QoSRequested" parameter into "traffic volume containers"
SP-020025	2 Rel-5 CR 32.205 & 32.215 (CS & PS charging) Addition of CAMEL phase 4 extensions in SMS-MT CDRs
SP-020026	Rel-4 CR 32.403 (Performance measurements - UMTS and combined UMTS/GSM) Correction of the measured object class for some SGSN MM measurement definitions
SP-020027	Rel-5 CR 32.403 (Performance measurements - UMTS and combined UMTS/GSM) Introduction of "Performance Measurements Definition Process" describing the repeatable, top-down process to define measurements for inclusion in future 3GPP Releases
SP-020028	3 Rel-4 CR 32.111-2/3/4 (Fault Management; Alarm Integration Reference Point; Part 2 Information Service/ Part 3 CORBA SS/ Part 4 CMIP SS) Addition of "perceivedSeverity" as parameter to "acknowledgeAlarms" operation
SP-020029	3 Rel-4 CR 32.111-2 (Fault Management; Alarm Integration Reference Point; Part 2 Information Service)
SP-020030	Rel-4 CR 32.303 (CM; Notification IRP CORBA SS) & 32.603 (Basic CM IRP CORBA Solution Set) Addition of missing CORBA exceptions
SP-020031	Rel-5 CR 32.304 (Configuration Management; Notification Integration Reference Point: CMIP SS) Correction of errors in the GDMO and ASN.1 definitions
SP-020032	Rel-4 CR 32.615 (Bulk configuration management IRP: XML file format definition) Alignment of XML file definitions with W3C, and modifications to allow use of commercially available XML processing tools
SP-020033	Rel-5 draft TS 32.225 v100 (Charging management; Charging data description for the IP Multimedia Subsystem) - for Information
SP-020034	2 Rel-5 draft TSs v100 on Kernel Configuration Management IRP: 32.661 (Requirements) & 32.662 (Information Service) - for Information
SP-020035	Rel-5 CR 32.205 (CS charging) Addition of Charging Data Record definition for Location Service in CS domain

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



3GPP SA5 Officers

- **Chair – VACANT**

Albert H. YUHAN (VoiceStream Wireless – until 12/2001 / T1)

was SA5 Chair since 03/99, re-elected 02/2001 – resigned 02/2002

- **Vice Chair** – since 06/99, re-elected 02/2001

Michael TRUSS (Motorola Ltd/ ETSI) – absent from the last two meetings in 2001
& chaired both SA5 meetings in 2002

- **Three (3) SWGs**

SWG-A: Telecom Management - Architecture and Requirements

Michael TRUSS (Motorola Ltd/ ETSI) – Chair since 09/2001

Tommy BERGGREN (Telia/ ETSI) – Vice Chair since 01/2002

SWG-B: Telecom Management - Data Definition (incl. Charging)

Karl-Heinz NENNER (T-Mobile/ ETSI) – Chair since 09/2001

SWG-C: Telecom Network Infrastructure Management

Thomas TOVINGER (Ericsson/ ETSI) – Chair since 09/2001

Joerg SCHMIDT (Motorola/ T1) – Vice Chair since 09/2001

Frédéric BONNEAU (Nortel/ ETSI) – Vice Chair since 10/2001

- **MCC Support** – since 01/2000 **Adrian ZOICAS (MCC)**

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



SWG structure

SWG Area of Responsibility

SWG-A Telecom Management - Architecture and Requirements

WI(spec): Architecture (32.101), Principles & Requirements (32.102), UTRAN-OAM (32.800), Subscription Management (SM) (32.140), User Equipment Management Feasibility Study (UEM) (32.802).

Liaison: T2 (MExE, UEM, SyncML), CN5 (OSA Management, OSA Charging), TMF (MMC, **Mobile Management Team**, MTEM), ITU-T SG4 (Architecture / Conformance).

SWG-B Telecom Management - Data Definition

WI(spec): Charging (32.200-series), Performance Management (PM) (measurements, concepts, definition and requirements (32.400-/52.400-series), Subscriber and UE Tracing (32.108).

Liaison: ITU-T SG4 (IMT2000 Management), **3G.IP (IP/Charging requirements for IMS)**, GSM Association (BARG **Charging Principles Working Party**, IREG, SERG), T2 (MMS charging), CN5 (OSA Charging), IETF-AAA (Diameter), **IPDR (Charging)**, **TMF (Wireless Service Management Team)**.

SWG-C Telecom Network Infrastructure Management (TM Solutions)

WI(spec): Configuration Management (CM) (R99 32.106, 32.600-series), Fault Management (FM) (32.111, 32.300-series), Performance Management (PM) - IRP portion (32.400-series), Integration Reference Points (IRPs) to support products of SA5's SWG-A and SWG-B.

Liaison: ITU-T SG 4 (CORBA, tML/XML), T1M1 (CORBA, TML), 3GPP2 (**Delta Specification**).

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Meetings held

SA5 #25

- 14 - 18 Jan 2002 in Sophia Antipolis, FRANCE
hosted by ETSI
Attended by 48 delegates
- Full report in **S5-020100**

SA5 #26

- 25 February – 1 March 2002 in Miami, USA
hosted by 3GPP NA Friends
Attended by 58 delegates
- Draft report in **S5-020143**

Joint sessions during SA5#26 in Miami, USA

- SA2 experts on IMS Charging Architecture (23.815, 32.200, 32.225)
- IPDR.org (Internet Protocol Detail Record Organization) on Charging
- TMF's Wireless Service Management Team on Service Measurements
- TMF's Mobile Management Team on UE Management

Activity Highlights (1/2)

- Release 5

Feature: Subscription Management (SM)

- “SM” WI is **95%** complete
- TS 32.140 v1.0.0 (Stage 1) submitted to SA#15 - **for Information**
- TSG approval target delayed from **03/2002** to **06/2002**
Reason: SM is closely linked to GUP, which will not be included in Rel-5 (S2-020887). **Move also SM to Rel-6 ?**

Feature: UE Management - Feasibility Study (UEM)

- “UEM” WI is **99%** complete
- TR 32.802 v1.0.4 submitted to SA#15 - **for the 2nd time for Information**
- TSG approval target delayed from **03/2002** to **06/2002**.
Reason: T2-SWG2 requesting further discussion & a joint session during SA5#27 in Cork (04/2002) in parallel with GUP ad-hoc meeting

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Activity Highlights (2/2)

- **Release 5**

Feature: Trace Management (Trace Mg)

- “Trace Mg” WI is **60%** complete (WID approved at SA#14, 12/2001)
- Submission to TSG **for Information** delayed from **03/2002** to **06/2002**

Reason: ongoing communication with CN4/SA3 (Information to be collected in MGW, security concerns when transmitting sensitive information like IMSI/IMEI across the Mc Interface)

- TSG approval target remains **06/2002**

Feature: Charging and OAM&P (OAM)

- “OAM” WI is **80%** complete
- TSG approval target remains **06/2002**

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Administrative /Organizational

- **Albert YUHAN, left VoiceStream Wireless end of 2001 and resigned as SA5 Chair on 18/02/2002**
- **The SA5 Vice Chair, Michael TRUSS (Motorola Ltd), chaired both SA5 meetings in 2002**
- **Elections for the now vacant SA5 Chair position and for a 2nd SA5 Vice Chair will take place at SA5#27 in Cork/ IRELAND (04/2002)**
- **Due to the increased volume of work (Charging, Trace) SA5 aims to split the current SWG-B in two separate SWGs. This should happen at SA5#27 (04/2002).**
- **Several ad-hoc meetings are planned in order to deliver SA5's Rel-5 completely at SA#16 in 06/2002**

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Inter-Organizational

Co-operation with:

3GPP2 TSG-S on Management Standards

- 3GPP2 TSG-S is referencing SA5's TSs in its specification S.S0028 "OAM&P for cdma2000 (3GPP Delta Specification)", which also documents some exception areas (e.g. network resource model for cdma2000)

ITU-T SG4 & T1M1 on CORBA framework and XML/TML standardization

- Further co-operation is under investigation (Feasibility Study in Rel-5)

TMF Mobile Marketing Centre (MMC) on 3G-mobile Management standards

- Joint session held at SA5#26 in Miami (02/2002) between TMF Mobile Team and SA5's SWG-B who are currently co-operating on Performance Management Measurement definitions. Identified scope for further possible co-operation with SA5's SWG-B/A in the area of Key Performance Indicators (KPI) and Key Quality Indicators (KQI) (being worked on by TMF) and QoS Management (being worked on by SA5's SWG-A).

Technical, Work Planning (1/4)

Feature: Subscription Management (Rel-5)

- “SM” work item is **95%** complete
- TS 32.140 v1.0.0 (Stage 1) submitted to SA#15 - **for Information**
- TSG approval target delayed from **03/2002** to **06/2002**
Reason: SM is closely linked to GUP, which will not be included in Rel-5 (S2-020887). **Move also SM to Rel-6 ?**
- Co-ordination still ongoing with other 3GPP WGs on:
 - GUP (SA1/T2), VHE (SA1), HSS Interface (CN4), OSA Management (CN5), UE Management (SA5)
- Joint SA5 SWG-A/T2 GUP planned at SA5#27 in Cork (**04/2002**)

SA is invited to:

1. note TS 32.140 v1.0.0 (Stage 1) "Services Operations Management; Subscription Management Requirements" (**SP-020012**)
2. give guidance/decide on the appropriateness of moving 32.140 (which is only Stage 1 and Stages 2/3 are not planned for Rel-5) to Rel-6 due to linkage with GUP, since GUP will not be included in Rel-5 (S2-020887).

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, Work Planning (2/4)

Feature: UE Management (Rel-5)

- “UEM” WI is **99%** complete
- TR 32.802 v1.0.4 submitted to SA#15 - **for the 2nd time for Information**
- TSG approval target delayed from **03/2002** to **06/2002**.
Reason: T2-SWG2 requesting further discussion & a joint session during SA5#27 in Cork (04/2002) in parallel with GUP ad-hoc meeting

Co-ordination ongoing with other groups:

- Joint SA5 SWG-A/T2 session planned at SA5#27 in Cork (**04/2002**)
- Subscription Management (SA5), GUP (SA1/T2), MExE (T2)
- TMF's MTEM (Mobile Terminal Equipment Management) : Joint meeting held at SA5#26 in Miami (**02/2002**).
- Aware of work in SyncML Device Management (DM)

SA is invited to:

- note Rel-5 draft TR 32.802 v1.0.4 done in co-operation with T2 on "User Equipment Management (UEM) feasibility study" (**SP-020011**)

Technical, Work Planning (3/4)

Feature: Trace Management (Rel-5)

- “Trace Mg” WI is **60%** complete (WID approved at SA#14, 12/2001)
- Submission to TSG **for Information** delayed from **03** to **06/2002**
Reason: ongoing communication with CN4/SA3 (Information to be collected in MGW, security concerns when transmitting sensitive information like IMSI/IMEI across the Mc Interface)
- TSG approval target remains **06/2002**
- SA#14 noted that this adds Trace into IMS (missing in GSM 12.08)
- The future of GSM 12.08 to be decided at SA5#27 (04/2002)
- SA#14 asked SA5 to investigate on possible work to be done by other 3GPP groups (CN, (GE)RAN) and to report back at SA#15.
- CN1 needs more information on requirements for a trace activation mechanism in SIP. CN1 cannot include trace functionality in Rel-5.
- RAN3 informs that the availability of the IMSI and IMEI in the RNC for trace purposes is not given in the cases inquired by SA5.
- RAN2 work needed for potential changes to radio signalling I/Fs

Technical, Work Planning (4/4)

Feature: Charging and OAM&P (Rel-5)

- “OAM” WI is **80%** complete
- TSG approval target remains **06/2002** (TSG#16)
- Contains Four (4) SA5 Building Blocks:
 - 1 Principles, high-level requirements and architecture (OAM-AR) - **100%** complete
 - 2 Charging Management (OAM-CH) - **80%** complete
 - 3 Performance Management (OAM-PM) - **95%** complete
 - 4 Network Infrastructure Management (OAM-NIM) - **60%** complete

Technical, OAM Rel-5 Feature delivery (1/8)

BB: Principles, high level Requirements and Architecture (OAM-AR) :

100% complete

SA decision is requested for

32.101 approval of 3 Rel-5 CRs (**SP-020013**)

32.102 approval of 2 Rel-5 CRs (**SP-020014**)

32.800 (UTRAN OAM) upgrade to Rel-5 without change

SA is invited to note and endorse the request that

- SA5 needs experts from the IMS/SSE equipment vendors to help it identify any specific management requirements that may exist (32.101: WT on Management of Service Specific Entities)

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (2/8)

BB: Charging Management (OAM-CH) : **80%** complete

SA decision is requested for

- **32.200 approval of 3 Rel-4 & 2 Rel-5 CRs (SP-020016)**
- **approval of 4 R99/Rel-4 CRs 32.005/205, 32.015/215 (SP-020022)**
- **approval of 2 R99 & Rel-4 CR 32.015/215 (PS) (SP-020024)**
- **approval of 2 Rel-5 CR 32.205 & 32.215 (CS & PS) (SP-020025)**
- **32.205 approval of Rel-5 CR (SP-020035)**
- **approval of Rel-4 CR 32.235 (SP-020017)**
- **32.235 to NOT upgrade to Rel-5 now; wait for major CR in 06/2002 (substantial input from GSMA is still pending)**

SA is invited to note

- **32.225 to note Rel-5 draft v100 (IMS Charging) (SP-020033)**

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (3/8)

BB: Performance Management (OAM-PM) : 95% complete

SA decision is requested for

- 32.401 upgrade to Rel-5 without change
- 52.402 to NOT upgrade to Rel-5 now; wait for CR in 06/2002
- 32.403 approval of 1 Rel-4 CR (**SP-020026**)
- 32.403 approval of 1 Rel-5 CR (**SP-020027**)

A GLOBAL INITIATIVE

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (4/8)

BB: Network Infrastructure Management (OAM-NIM) : 60% complete

SA decision is requested for

- **32.111-1 upgrade to Rel-5 without change**
- **approval of 3 Rel-4 CR 32.111-2/3/4 (SP-020028)**
- **32.111-2 approval of 3 Rel-4 CR (SP-020029)**
- **32.111-3 approval of 1 Rel-4 CR (SP-020015)**
(upgrade to Rel-5 only after the implementation of the above CRs)
- **32.311 upgrade to Rel-5 without change**
- **32.312 upgrade to Rel-5 without change**

A GLOBAL INITIATIVE

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (5/8)

BB: Network Infrastructure Management (OAM-NIM) : 60% complete

SA decision is requested for

- **32.300** to NOT upgrade to Rel-5 now; wait for CR in 06/2002
- **32.301** upgrade to Rel-5 without change
- **32.302** *exists already in Rel-5*
- **32.303** approval of 1 Rel-4 CR (**SP-020030**)
- **32.303** upgrade to Rel-5 after the implementation of the above CR
- **32.304** approval of 1 Rel-4 CR (**SP-020018**)
- **32.304** *exists already in Rel-5*
- **32.304** approval of 1 Rel-5 CR 32.304 (**SP-020031**)

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (6/8)

BB: Network Infrastructure Management (OAM-NIM) : 60% complete

SA decision is requested for

- 32.603 approval of 2 Rel-4 CR (**SP-020019**)
- 32.615 approval of Rel-4 CR (**SP-020032**)
- 32.622 approval of Rel-4 CR (**SP-020020**)
- 32.624 approval of 3 Rel-4 CR (**SP-020021**)

to NOT upgrade to Rel-5 now; wait for CRs in 06/2002

- 32.600,
- 32.601, 32.602, 32.603, 32.604
- 32.611, 32.612, 32.613, 32.614, 32.615
- 32.621, 32.622, 32.623, 32.624,
- 32.631, 32.632, 32.633, 32.634
- 32.641, 32.642, 32.643, 32.644
- 32.651, 32.652, 32.653, 32.654

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (7/8)

BB: Network Infrastructure Management (OAM-NIM) : 60% complete

SA decision is requested for

- **32.600,**
- **32.601, 32.602, 32.603, 32.604**
- **32.611, 32.612, 32.613, 32.614, 32.615**
- **32.621, 32.622, 32.623, 32.624,**
- **32.631, 32.632, 32.633, 32.634**
- **32.641, 32.642, 32.643, 32.644**
- **32.651, 32.652, 32.653, 32.654**

to NOT upgrade to Rel-5 now; wait for CR in 06/2002

A GLOBAL INITIATIVE

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Technical, OAM Rel-5 Feature delivery (8/8)

BB: Network Infrastructure Management (OAM-NIM) : **60%** complete

New TSs in Rel-5

Early drafts partly available for:

- **32.321, 32.322, 32.323, 32.324 (Test Management IRP)**
- **32.625, 32.635, 32.645, 32.655 (IRPs in XML)**
- **32.671, 32.672, 32.673, 32.674 (State Management IRP)**

SA is invited to note

- **32.661, 32.662 (Kernel CM IRP) Rel-5 drafts v100 (SP-020034)**
- **32.663, 32.664 (CORBA/CMIP Solution Sets will NOT exist in Rel-5)**

A GLOBAL INITIATIVE

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002

Future SA5 Meetings



Meeting	Date	Location	Host
SA5#27	2-5 Apr 2002	Cork, IRELAND	Motorola
SA5#28	20-24 May 2002	Sophia Antipolis, FRANCE	ETSI
TSG#16	4 - 13 Jun 2002	Marco Island, FL, USA	Motorola
SA5#29	24-28 Jun 2002	Beijing, CHINA	Nortel Networks
SA5#30	19-23 Aug 2002	Tampere, FINLAND	NOKIA
TSG#17	3 - 12 Sep 2002	Biarritz, FRANCE	Alcatel
SA5#31	7-11 Oct 2002	Phoenix, AZ, USA	NA Friends
SA5#32	18-22 Nov 2002	Sophia Antipolis	ETSI
TSG#18	3 - 12 Dec 2002	New Orleans, USA	NA Friends
SA5#33	20-24 Jan 2003	Sophia Antipolis	ETSI
TSG#19	11 - 21 Mar 2003	Jersey Island, UK	UK Friends

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Background material

A GLOBAL INITIATIVE

Charging Management

3GPP R99	32.005	Call and event data for the CS domain
	32.015	Call and event data for the PS domain
3GPP Rel-4	32.200	Charging Principles
	32.205	Charging data description for the CS domain
	32.215	Charging data description for the PS domain
	32.235	Charging data description for application services
3GPP Rel-5	32.200	Charging Principles
	32.205	Charging data description for the CS domain
	32.215	Charging data description for the PS domain
	32.225	Charging data description for the IMS domain
	32.235	Charging data description for application services

Performance Management

3GPP {	32.104	Performance Management
---------------	--------	------------------------

R99

3GPP { Rel-4	32.401	Performance Management; Concept and requirements
	52.402	Performance measurements - GSM
	32.403	Performance measurements - UMTS and combined UMTS/GSM

3GPP { Rel-5	32.401	Performance Management; Concept and requirements
	52.402	Performance measurements - GSM
	32.403	Performance measurements - UMTS and combined UMTS/GSM

TSGS#15(02)0010

Meeting #15, Cheju Island, Korea, 11-14 March 2002



Configuration Management

3GPP
R99

32.106-1	Configuration Management; Concept and requirements
32.106-2	CM; Part 2: Notification IRP IS
32.106-3	CM; Part 3: Notification IRP; CORBA SS
32.106-4	CM; Part 4: Notification IRP; CMIP SS
32.106-5	CM; Part 5: Basic CM IRP information model (including NRM)
32.106-6	CM; Part 6: Basic CM IRP CORBA SS
32.106-7	CM; Part 7: Basic CM IRP CMIP SS
32.106-8	CM; Part 8: Name convention for Managed Objects

3GPP
Rel-4

- see next slide

A GLOBAL INITIATIVE

Fault Management

3GPP R99

32.111-1	Fault Management requirements
32.111-2	FM; Part 2: Alarm IRP; IS
32.111-3	FM; Part 3: Alarm IRP; CORBA
32.111-4	FM; Part 4: Alarm IRP; CMIP SS

3GPP Rel-4

32.111-1	Fault Management requirements
32.111-2	FM; Part 2: Alarm IRP; IS
32.111-3	FM; Part 3: Alarm IRP; CORBA
32.111-4	FM; Part 4: Alarm IRP; CMIP SS
32.311	Generic IRP management; Requirements
32.312	Generic IRP management; IS

3GPP Rel-5

FM + CM = NIM
Telecom
Network
Infrastructure
Management

32.111-1	Fault Management; Requirements
32.111-2	FM; Part 2: Alarm IRP; IS
32.111-3	FM; Part 3: Alarm IRP; CORBA SS
32.111-4	FM; Part 4: Alarm IRP; CMIP SS
32.311	Generic IRP management; Requirements
32.312	Generic IRP management; IS

*TSGS#15(02)0010
Meeting #15, Cheju*

Configuration Management

**3GPP
Rel-4
&**

Telecom Network Infrastructure Management

Rel-5

32.600	Configuration Management; Concept and main Requirements
32.601	Basic CM Integration Reference Point (IRP): Requirements
32.602	Basic CM IRP: Information model
32.603	Basic CM IRP: CORBA solution set
32.604	Basic CM IRP: CMIP solution set
32.611	Bulk CM IRP: Requirements
32.612	Bulk CM IRP: Information service
32.613	Bulk CM IRP: CORBA solution set
32.614	Bulk CM IRP: CMIP solution set
32.615	Bulk CM IRP: XML file format definition
32.621	Generic Network Resources (NR) IRP: Requirements
32.622	Generic NR IRP: Network Resource Model (NRM)
32.623	Generic NR IRP: CORBA solution set
32.624	Generic NR: IRP CMIP solution set
32.631	Core NR IRP: Requirements
32.632	Core NR IRP: NRM
32.633	Core NR IRP: CORBA solution set
32.634	Core NR IRP: CMIP solution set
32.641	UTRAN NR IRP: Requirements
32.642	UTRAN NR IRP: NRM
32.643	UTRAN NR IRP: CORBA solution set
32.644	UTRAN NR IRP: CMIP solution set
32.651	GERAN NR IRP: Requirements
32.652	GERAN NR IRP: NRM
32.653	GERAN NR IRP: CORBA solution set
32.654	GERAN NR IRP: CMIP solution set



**Telecom
Network
Infrastructure
Management**

**New in
3GPP
Rel-5**

32.321	Test Management IRP: Requirements	Siemens lead
32.322	Test Management IRP: Information service	
32.323	Test Management IRP: CORBA solution set	
32.324	Test Management IRP: CMIP solution set	
32.625	Generic NR IRP: Bulk CM XML file format definition	Nortel Networks lead
32.635	Core NR IRP: Bulk CM XML file format definition	
32.645	UTRAN NR IRP: Bulk CM XML file format definition	
32.655	GERAN NR IRP: Bulk CM XML file format definition	
32.661	Kernel CM IRP: Requirements	AWS lead
32.662	Kernel CM IRP: Information service	
32.663	Kernel CM IRP: CORBA solution set	
32.664	Kernel CM IRP: CMIP solution set	
32.671	State Management IRP: Requirements	Siemens lead
32.672	State Management IRP: Information service	
32.673	State Management IRP: CORBA solution set	
32.674	State Management IRP: CMIP solution set	