



International Telecommunication Union

3GPP2 OAM&P Overview & Recommendations



**3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"**

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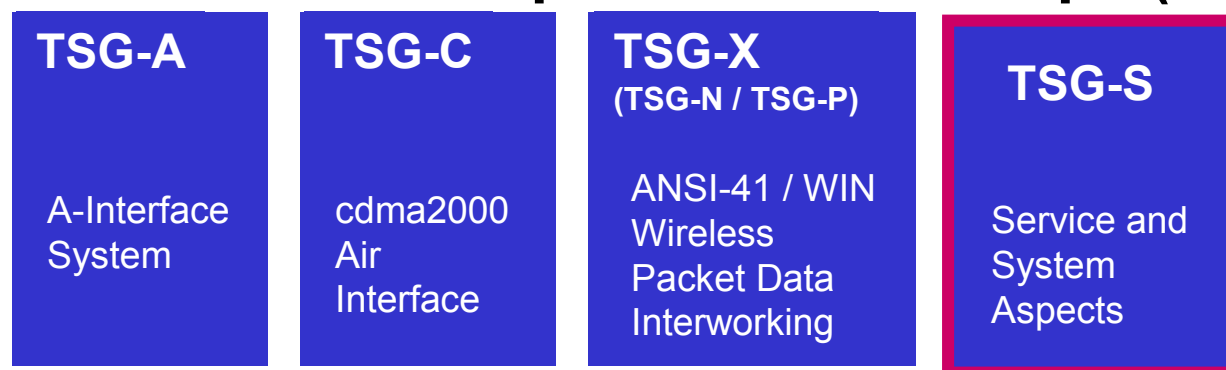
ITU-T Workshop "Telecommunication Management and Operations Support Systems"
Beijing, China, 22-23 May 2006

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- 3GPP2 Procedural Aspect
- 3GPP2 OAM&P Specifications
- 3GPP2 & 3GPP IRP Framework
- Reuse & Extending 3GPP Specifications
- Recommendations for other Standards Organizations
- Q & A

3GPP2 Steering Committee

Technical Specification Groups (TSG's)



- WG1 – Features & Services Requirements
- WG2 – Architecture
- WG3 – Program Management
- WG4 – Security
- WG5 – OAM&P**

3GPP2 Org Information

- Upcoming 3GPP2 TSG-S meetings in 2006:
 - June 26-30: Miyazaki, Japan
 - July/August 31-03: Montreal, Canada
 - September 11-14: Xi'an, China
 - *October/November 30-02: Chicago, IL, USA (w/o WG5)*
 - December 4-7: Maui, HI, USA
- Meeting calendar: http://www.3gpp2.org/Public_html/Calendar/index.cfm

- 3GPP2 Info
 - 3GPP2: <http://www.3gpp2.org>
 - 3GPP2 Organizational Partners:
 - ARIB, CCSA, TIA, TTA, TTC
 - Current member companies:
http://www.3gpp2.org/Public_html/Misc/MembersHome.cfm
 - 3GPP2 Specifications: http://www.3gpp2.org/Public_html/specs/index.cfm
 - 3GPP2 TSG-S Contributions: <ftp://ftp.3gpp2.org/TSGS/Working/>

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3GPP
TSG-SA5

Alignment!



3G
3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"
TSG-S WG5

- 3GPP defines standard Northbound Interfaces based on Integration Reference Point (IRP) methodology
- 3GPP2 re-uses 3GPP's Interface IRP's as well as the Generic portion of the NRM IRP's – and is adding CDMA/CDMA2000 NRM IRP's
- *Enabling One set of NBI Standards for all 2G, 3G, 4G and future wireless & wireline technologies!*



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3GPP2 O&M Specifications



- Delta Specifications
 - *S.S0028-xxx-C*
 - *S.S0028-000-B: "OAM&P for cdma2000 (Overview)";*
 - *S.S0028-001-B: "OAM&P for cdma2000 (3GPP R5 Delta Specification)";*
 - *S.S0028-002-B: "OAM&P for cdma2000 (3GPP2 Generic NRM IRP)";*
 - *S.S0028-003-B: "OAM&P for cdma2000 (3GPP2 Core NRM IRP)";*
 - *S.S0028-004-B: "OAM&P for cdma2000 (3GPP2 Radio Access NRM IRP)";*

- S.R0017-0
 - "3G Wireless Network Management System High Level Requirements"

- S.P0093-0
 - "CDMA2000 Network Performance Measurement Types"



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3GPP2 S.S0028-xxx-C: What ...



- o What it is:
 - **A Delta specification**
 - Incorporation 3GPP SA5 R6 Specifications by reference
 - Defining exceptions and additions (“delta’s”) as applicable to cdma2000
 - Providing cdma2000 specific specifications (e.g. 3GPP2 NRM IRP’s)

- o What is included:
 - **3GPP SA5 R6 Specifications**
 - Requirements & Architecture (32.101, 32.102)
 - CM Requirements (32.600) & Naming Conventions (32.300)
 - Interface IRP’s: Alarm IRP (32.111-x), Notification IRP (32.30x), Generic IRP (32.12x), Test Management IRP (32.32x), Notification Log IRP (32.33x), File Transfer IRP (32.34x), Communication Surveillance IRP (32.35x), Entry Point IRP (32.36x), Performance Management IRP (32.41x), BasicCM IRP (32.60x), BulkCM IRP (32.61x), Kernel CM IRP (32.66x)
 - NRM IRP’s: Generic NRM IRP (32.62x), State Management IRP (32.67x), Inventory Management NRM IRP (32.69x), Signaling Transport NRM IRP (32.74x)
 - PM Concept and Requirements, including Measurement Report File Format (32.401)
 - **3GPP2 NRM IRP’s**
 - 3GPP2 Generic NRM IRP,
 - 3GPP2 Core NW NRM IRP,
 - 3GPP2 RAN NRM IRP



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3GPP2 O&M Work in Progress



- S.P0028-xxx-C (R6-based Delta Specification - V2.0)
 - NRM alignment with China Unicom specification
 - Additional NRM enhancements, e.g. EV-DO revisions, Antenna, Repeater
 - Further IMS model alignment w/ 3GPP, including consideration for ITU-T NGNMFG & TISPAN WG8

- S.P0093 - 3GPP2 Measurement Type Definitions (REV-A V1.0)
 - Further measurement types alignment with China Unicom specification
 - New IMS and RAN measurements
 - Further alignment w/ 3GPP measurement type related definitions

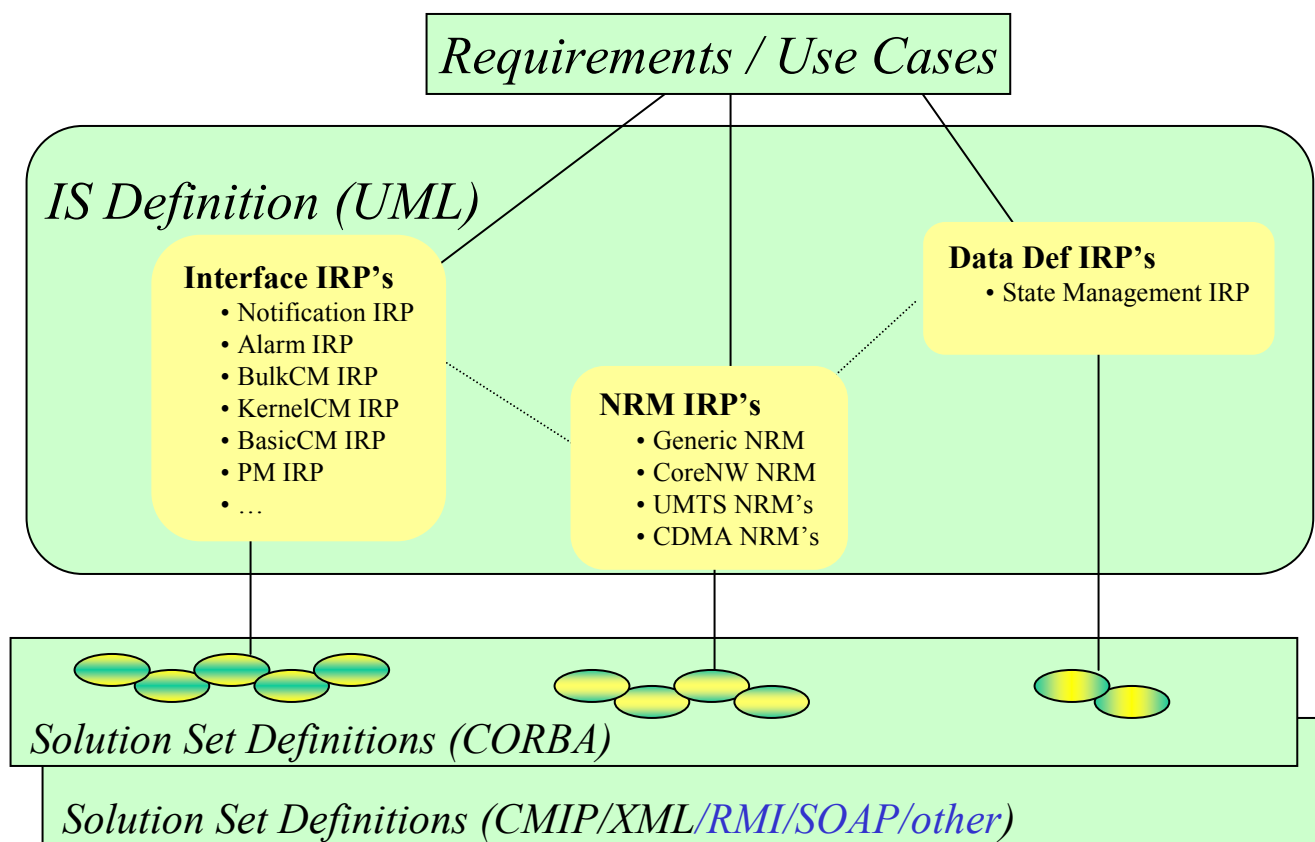
- S.R0017 Updates

- Potential other topics
 - Call Trace
 - Subscription Management

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IRP Concept – Build to last ... and to cope with change



Relative stable over long period of time

Changes only with respect to addition and extensions

Changes with new/better Technologies

IRP Development Principles

- Interface IRP & NRM IRP Independence
 - Interface IRP's: Defining HOW Information is shared (Operations & Notifications)
 - NRM IRP's: Defining WHAT can be managed (Object Models)
 - **Enabling: Independent development as well as reusable across the industry**

- NRM IRP Extendibility
 - Rule-based NRM Extensions (Sub-classing)
 - vsDataContainer
 - **Enabling: Technology & vendor specific NRM extensions (3GPP2 NRM's are technology-specific NRM extensions !!)**

- Interface IRP Flexibility
 - Flexible use of qualifiers “mandatory”, “optional”, “visibility” for operation, notifications and/or parameters
 - NRM/Technology-neutrality & avoiding competing procedures
 - **Enabling: wide applicability, phased introduction capabilities & broad industry adoption (not just for wireless !!)**

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Reuse: Delta Specification Method



- *What does it mean*
 - **Incorporation of 3GPP SA5 Specifications by reference**
 - Applicable to all Interface IRP's as well as Generic NRM IRP definitions - as these are Domain NW-Technology agnostic (can be used for Wireline NW's, Wireless NW's, Equipment, Services, etc. ... Northbound & Peer-to-Peer!!)

- *How to*
 - **Defining exceptions and additions ("delta's") as applicable to the business and domain technology needs**
 - Examples are 3GPP2 S.S0028-001-C, and also TMF TMF058 (CO~OP)

- *Advantages*
 - **Enables multi-vendor OSS Components & management of multi-vendor Networks**
 - **Enables Cost-effective OSS/Management Systems Integration**
 - **limiting significantly the INTEGRATION TAX**



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Extension Mechanisms



- *What does it mean*
 - **Domain-specific Resource Models are defined using specified rule-based NRM Extensions (Sub-classing)**
 - Domains: wireless, wireline, equipment, services

- *How to*
 - **Extensions via Sub-classing from Generic Resource Models using 3GPP-defined IRP Methodology definitions (IS Template, UML Repertoire, SS Guidelines)**
 - Currently defined Generic Resource Models: 3GPP Generic NRM IRP, 3GPP Inventory NRM IRP, 3GPP Signaling Transport NRM IRP, 3GPP2 Generic NRM IRP
 - Examples are 3GPP2 S.S0028-003-C, 3GPP2 S.S0028-004-C, and also IEEE 802.16i

- *Advantages*
 - **Allows for re-use/multi-use of management systems**
 - Applicable not only to Standards Organizations, but also Service Providers/Operators & Vendors
 - **limiting significantly the INTEGRATION TAX**

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Recommendations



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- Adopt 3GPP & 3GPP2 IRP Framework for
 - IRP Methodology Specifications - 32.150 / 32.151 / 32.152
- Adopt & Re-use 3GPP Interface IRP's for as Management Interface
 - Providing most, if not all, FCAPS capabilities needed → Network Resource Model (*NRM independent*)
- Adopt & Re-use Generic & Applicable NRM IRP's, e.g. for NGN
 - 3GPP: Generic NRM IRP (32.62x) & Core NRM IRP (32.63x) - *containing IMS aspects*
 - 3GPP2: Core NRM IRP (S.S0028-003-B) - *containing IMS aspects*
 - *Extend as necessary & appropriate (using standardized extension rules)*
- **Advantages**
 - *Adopted by Wireless Industry - but not Wireless specific*
 - *Flexible & Modular Structure / Horizontal & Vertical Split*
 - *Aligned with principles of TMF NGOSS*
 - *Allows for Industry & Vendor specific Extensions*
 - *Enables Multiple Interface Protocols*
 - *Adoption of new Management Interface Protocols as Needed*

