



International Telecommunication Union

ITU-T Overview of NGN Management

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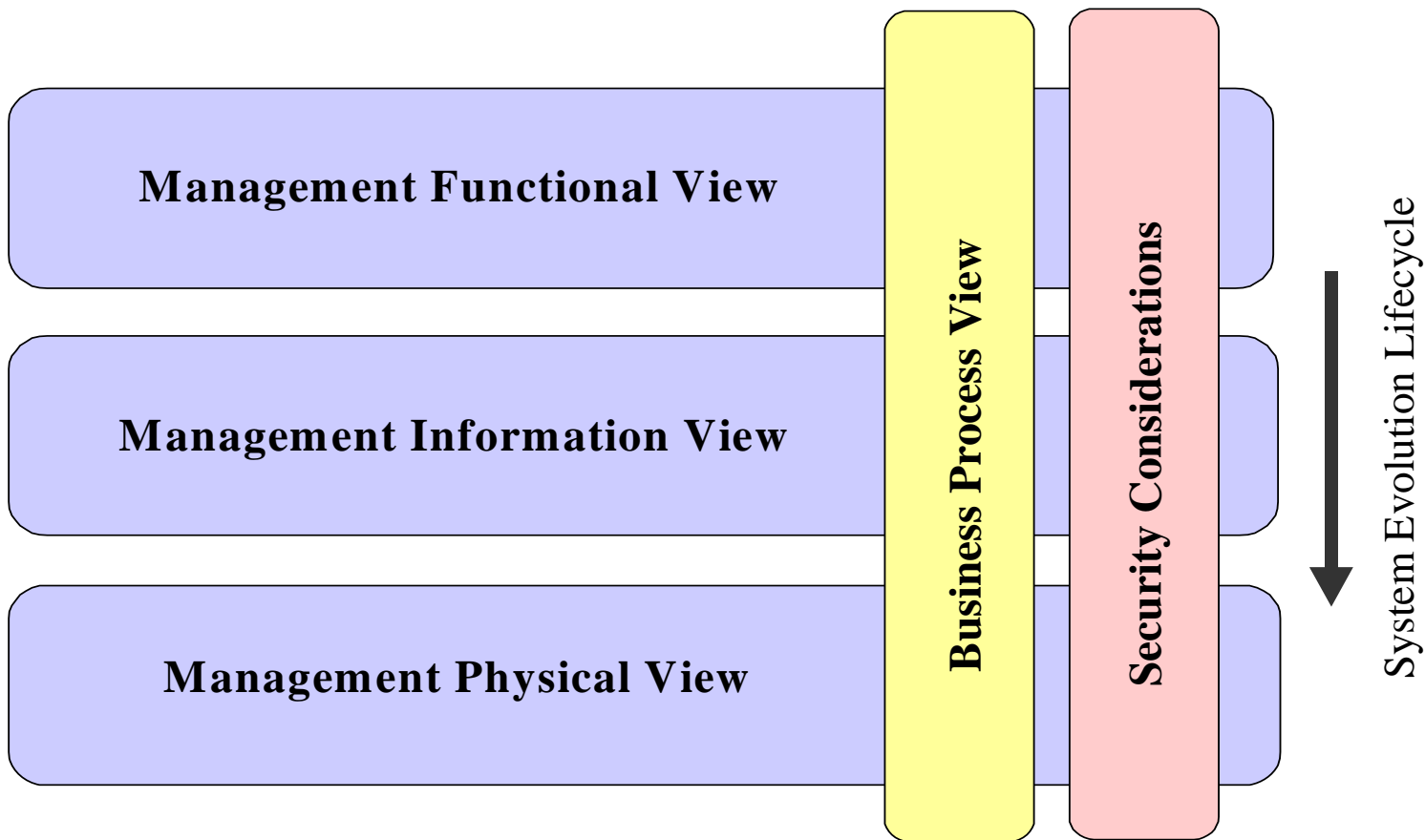


**ITU-T/OGF Workshop on Next Generation Networks and Grids
Geneva, 23-24 October 2006**

Topics

- o ITU-T SG 4
- o NGN Management Focus Group (NGNMFG)
- o NGN Management Specification Roadmap
- o Backup charts

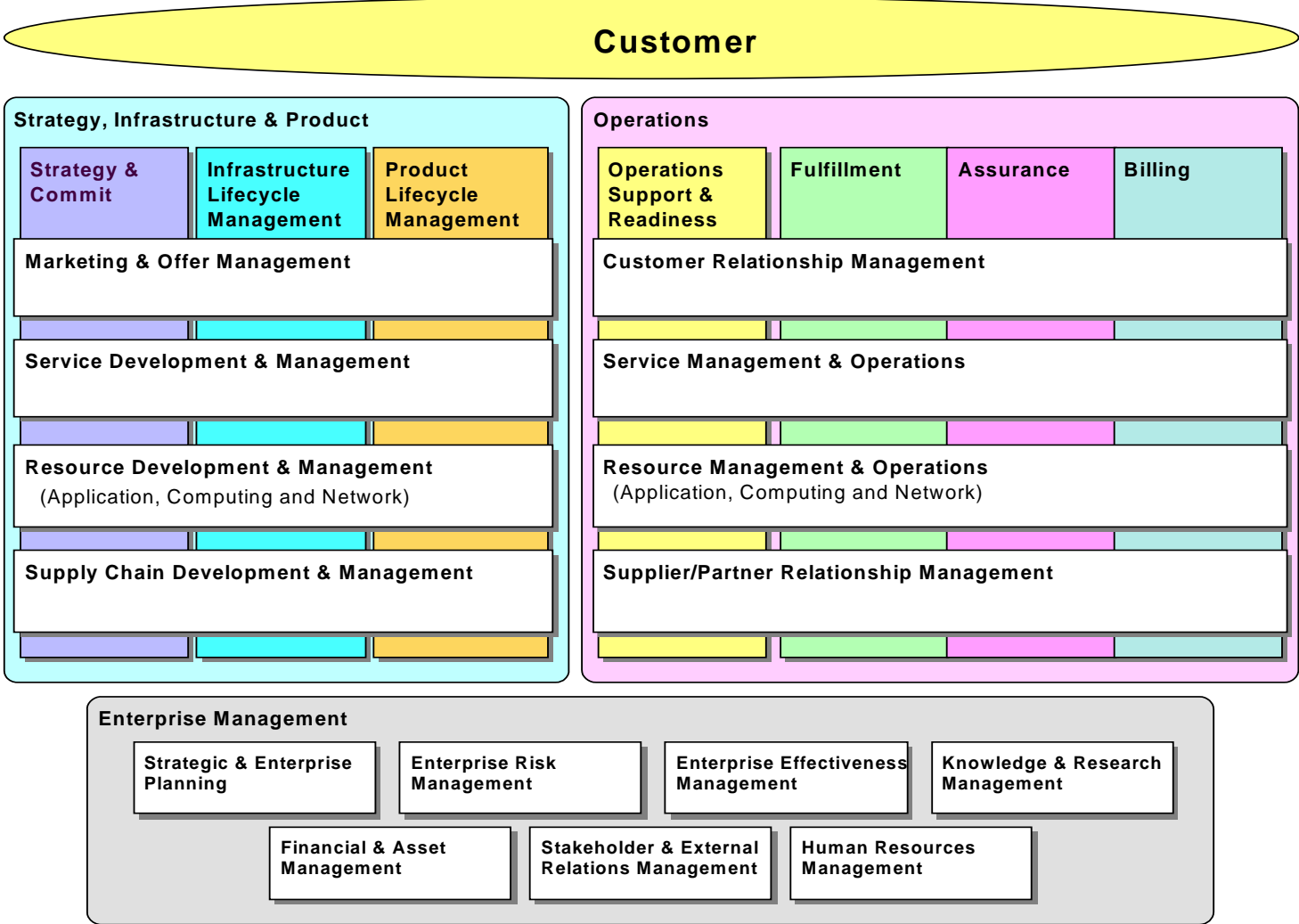
NGN Management Architecture (M.3060)



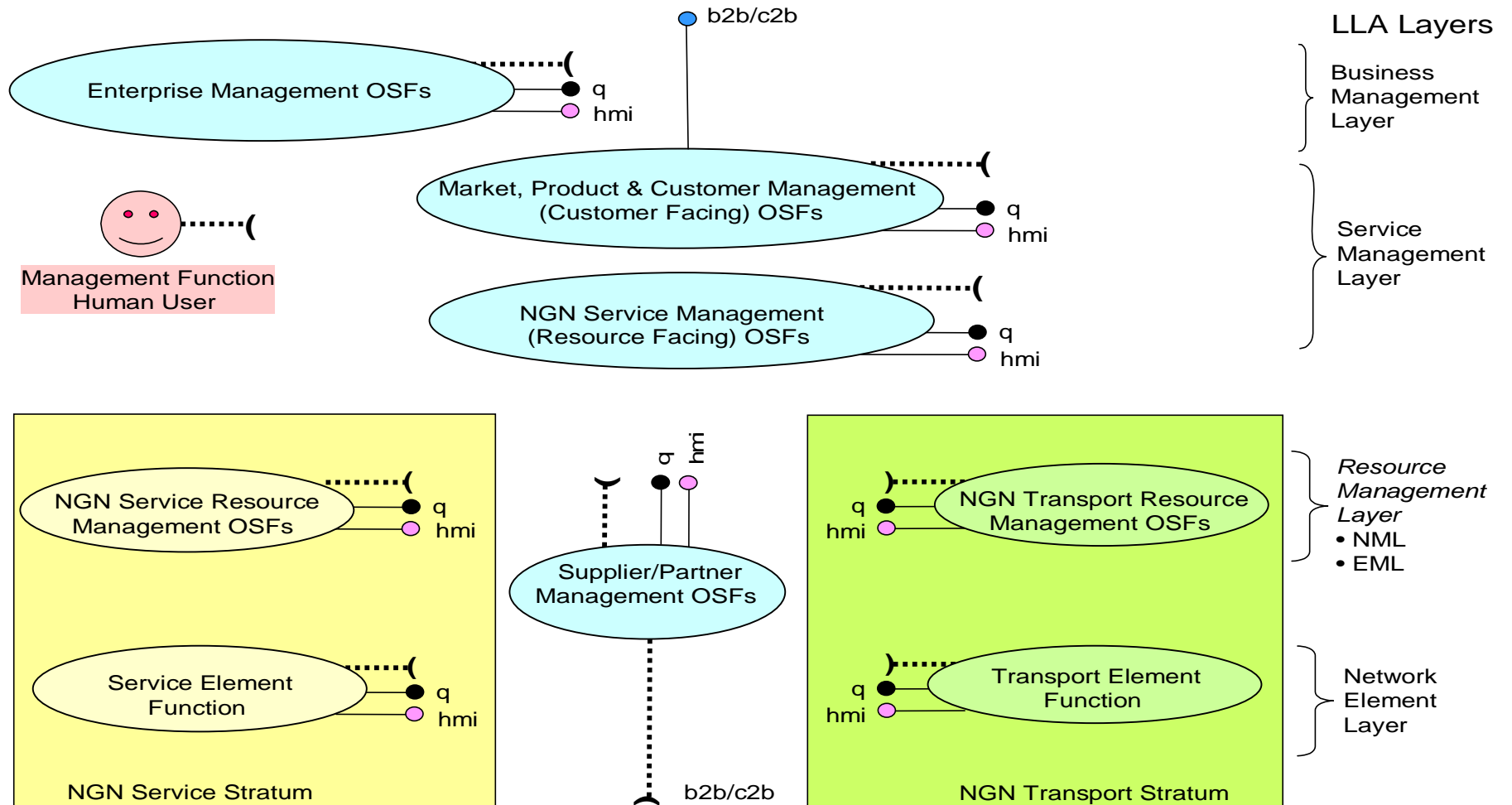


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Business Process View (M.3050 series = TMF eTOM)



NGN Management Logical Layered Architecture (M.3060)



Security of the Management Plane (M.3016 series)

- Based on ATIS/TMOC T1.276 but designed for global application
 - M.3016.0: Overview
 - M.3016.1: Requirements
 - M.3016.2: Services
 - M.3016.3: Mechanisms
 - M.3016.4: Profile proforma
- Proforma allows SDOs and forums to profile other M.3016 parts for local application



NGN Management Focus Group (NGNMFG)

- Established by ITU-T SG 4 in Sept 2004 to support NGN Release 1; re-chartered by SG 4 in Feb and Sept 2005 and June 2006
- Based on a proposal from leaders of major SDOs, forums, and consortia
- Focused on the following (FCAPS) management interfaces:
 - Network Element - Management System
 - Management System - Management System

FCAPS - Fault, Configuration, Accounting, Performance, and Security Management



NGN Management FG – Objectives - 1

- o General goal
 - To provide the management interface capabilities to support the ITU-T objectives for Release 1 consistent with the high level requirements and architecture in Y.2001, Y.2011, and Y.2012 (Y.NGN-FRA)
- o To produce a NGN Management Specification Roadmap focused on Release 1 which identifies
 - Requirements
 - Framework, principles, and architecture
 - Interface specifications, both protocol-neutral and protocol-specific



NGN Management FG – Objectives – 2

- To collaborate with world's major SDOs, forums, and consortia
 - Emphasizing reuse of their management specifications where relevant
- To identify specification "overlaps" and stimulate their owners to harmonize them
- To identify "gaps" and best organization(s) to fill the gaps
- As a last resort, to produce specifications





Organizations with most active participants

- o ITU-T SG 4 and SG 15 (Q14)
- o ATIS TMOC
- o ETSI TISPAN (WG8)
- o TeleManagement Forum (TMF)
- o Distributed Management Task Force (DMTF)
- o 3GPP SA5
- o 3GPP2 TSG-S (WG5)
- o OASIS (WSDM)
- o IETF (Operations and Management Area)





NGN Management Specification Roadmap- 1

ITU-T SG 4

- M.3016 series (Security of the management plane)
- M.3050 series (Enhanced Telecom Operations Map)
- M.3060 (NGN principles and architecture)
- M.3341 (QoS/SLA management service requirements)
- M.3350 (Emergency telecommunication service management requirements)
- Q.838.1 (EPON management and analysis)
- Q.840.1 (Requirements and analysis for EOT and metro ethernet networks)
- X.alarm-neutral (Protocol-neutral alarm reporting model)





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NGN Management Specification Roadmap- 2

- ITU-T SG 15
 - G.7718, G.7718.1 (ASON control plane management)
- ETSI TISPAN WG8
 - TS 188 004 (Vision for NGN OSS)
 - TS 188 003 (NGN OSS Requirements)
 - TS 188 001 (NGN OSS architecture for R1)
- TeleManagement Forum
 - Enhanced Telecom Operations Map (eTOM; =M.3050)
 - Multi-technology Network Management (MTNM)
 - Technology-Neutral Architecture (TNA)
 - Shared Information and Data Model (SID)





NGN Management Specification Roadmap- 3

o 3GPP SA5

- 32.111 series (alarm IRP)
- 32.200 series (subset for IMS offline and online charging and billing)
- 32.300 common management series (notification and generic IRPs)
- 32.600 series (interface IRPs for basic CM and kernel CM; NRM IRPs for generic and core; data definition IRPs for state management)

o Metro Ethernet Forum

- MEF 7 (EMS-NMS information model for metro ethernet networks)





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NGN Management Specification Roadmap- 4

o OASIS

- WSDM-MUWS (Web services distributed management)

o IETF

- RFC 3444 (On the difference between information models and data models)
- RFC 3535 (Overview of the 2002 IAB network management workshop)
- STDs 58 and 62 (Simple Network Management Protocol and associated SMI)
- Netconf (NETCONF configuration protocol)





NGN Management Specification Roadmap- 5

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o ATIS TMOC

Usage data for packet-based services

- 0300075 (Service -neutral architecture and protocol requirements)
- 0300075.1 (Service-neutral protocol specifications for billing applications)

o DMTF

- Common Information model (CIM)
- Web-based enterprise management (WBEM)

Note: Some of the above specifications are in draft form.



NGNMFG Harmonization Activity

- Management architecture: SG4, TISPAN, TMF
- Alarm reporting: TMF, 3GPP, SG4, DMTF
- State management: TMF, 3GPP
- Accounting, charging, and billing: SGs 4 and 13, ATIS TMOOC, 3GPP SA5, TISPAN
- Ethernet management: SG4, MEF, TMF
- Information Models (many SDOs/forums)
 - 2 fold focus: generic, NGN functions
- XML-based framework and models (many SDOs/forums)



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NGNMFG Provider / Operator Event

- o To ensure Roadmap's completeness and relevance for service providers and network operators, their input is explicitly solicited at 24-25 October 2006 event in Geneva
- o Focus placed on
 - identifying management specification and area gaps
 - Identifying management harmonization needs
 - a time scale for the availability of specifications for the various management areas
- o Solicited topics include: management of IMS, service, SLA, subscriber/subscription, and accounting/charging/billing





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NGN Management Focus Group - Summary

- Leadership
 - Chair: Dave Sidor (Nortel Networks)
 - Vice Chair: Leen Mak (Lucent Technologies)
- Participation
 - Open; individuals from founding organizations encouraged
 - Registration required: see <http://www.itu.int/ITU-T/studygroups/com04/ngn-mfg/index.html>
- Time schedule
 - Roadmap Version 1 submitted to SG 4: September 2005
 - Roadmap Version 2 to SG 4: May 2006
 - Roadmap Version 3 to SG 4: February 2007
- Working methods
 - Decision-making via consensus
 - Virtual meetings, but f2f meetings allowed
 - Any specifications produced are candidates to be SG 4 Recommendations

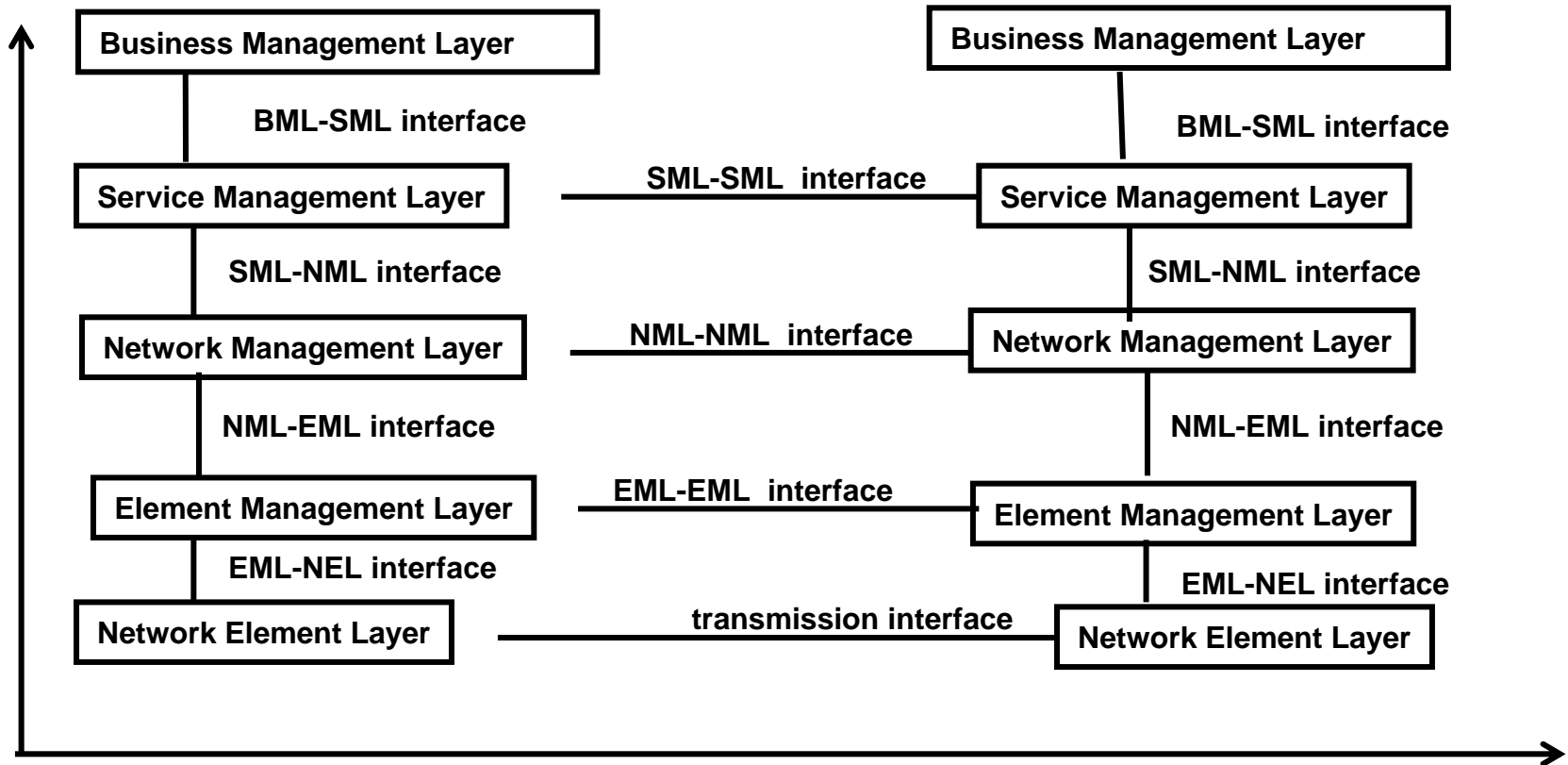




Backup Charts



NGNMFG Scope: FCAPS Management Interfaces



• Excludes transmission interfaces

NGNMFG Template for Specification Candidates

Short Name

- o Title:
- o Status: approved, draft (due date)
- o Organization (group):
- o Organization leader (group leader):
- o Type: architecture (functional, physical), functional requirements, information model (protocol-neutral, protocol-specific), protocol, conformance
- o Role: generic, technology-specific, NGN-specific
- o Release 1 application:
- o Traceability:
- o Location of text: either URL or NGNMFG ID number
- o Remarks:



Acronyms

- o ASON - Automatic switching optical network
- o BML - Business management layer
- o CM - Configuration management
- o EML/S - Element management layer/system
- o EOT - Ethernet over transport
- o EPON - Ethernet passive optical network
- o eTOM - Enhanced Telecom Operations Map (tm)
- o FCAPS - Fault, configuration, accounting, performance, and security management (combination of FM, CM, AM, PM, and SM)
- o FRA - Functional requirements and architecture
- o HMI/hmi - Human machine interface
- o IMS - IP multimedia subsystem
- o IRP - Integration reference point
- o LLA - Logical layered architecture
- o MTNM - Multi-technology network management
- o NE(L) - Network element (layer)
- o NML/S - Network management layer/system
- o NRM - Network resource model
- o OS(F) - Operation system (function)
- o OSS - Operations support system (specialization of an OS)
- o SLA - Service level agreement
- o SML - Service management layer
- o UTRAN - UMTS radio access network
- o WS - Workstation

