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IPsphere FORUM

THE BUSINESS OF IP

Mission & Concepts
Organization & Milestones

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Agenda

- Service Provider Priorities
- IPsphere Concepts and Design Goals
- IPsphere Framework Overview
- IPsphere Forum Organization & Milestones



Service Provider Situation Analysis

Yesterday

Consumer \$\$ engine =
Voice

Business \$\$ engine = inter-
office carriage

Scarce bandwidth = Time,
distance, capacity-based
charging

Vertical integration =
Service specific facilities
& practices

Transformation

Support ongoing legacy
service revenues

Transition to more flexible
lower cost infrastructure

Proliferate broadband as
platform for growth services

Enable service elements to
be contributed from variety
of (internal & external)
groups

Support multi-technology,
multi-vendor resources

Address, pre-empt public
policy



Tomorrow

Consumer \$\$ engine =
Content

Business \$\$ engine = SaaS,
hosting, managed services

Bandwidth not a limit =
Charge for higher level
resources

Resources "any-sourced" =
Service agile facilities &
practices



Requirement for Unprecedented Flexibility

- Optical, Ethernet & IP can support almost any customer-facing service
- But the conception of service most often supported today reflects
 - Vertically integrated
 - Single-provider
 - Single-technology
- Flexibility demands service conceptualization without such limitations



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What is the IPsphere Forum?

Mission: An enhanced commercial framework - or business layer - for IP services that preserves the fundamental ubiquity of the Internet's technical framework and is also capable of supporting a full range of business relationships so that participants have true flexibility in how they add value to upstream outcomes

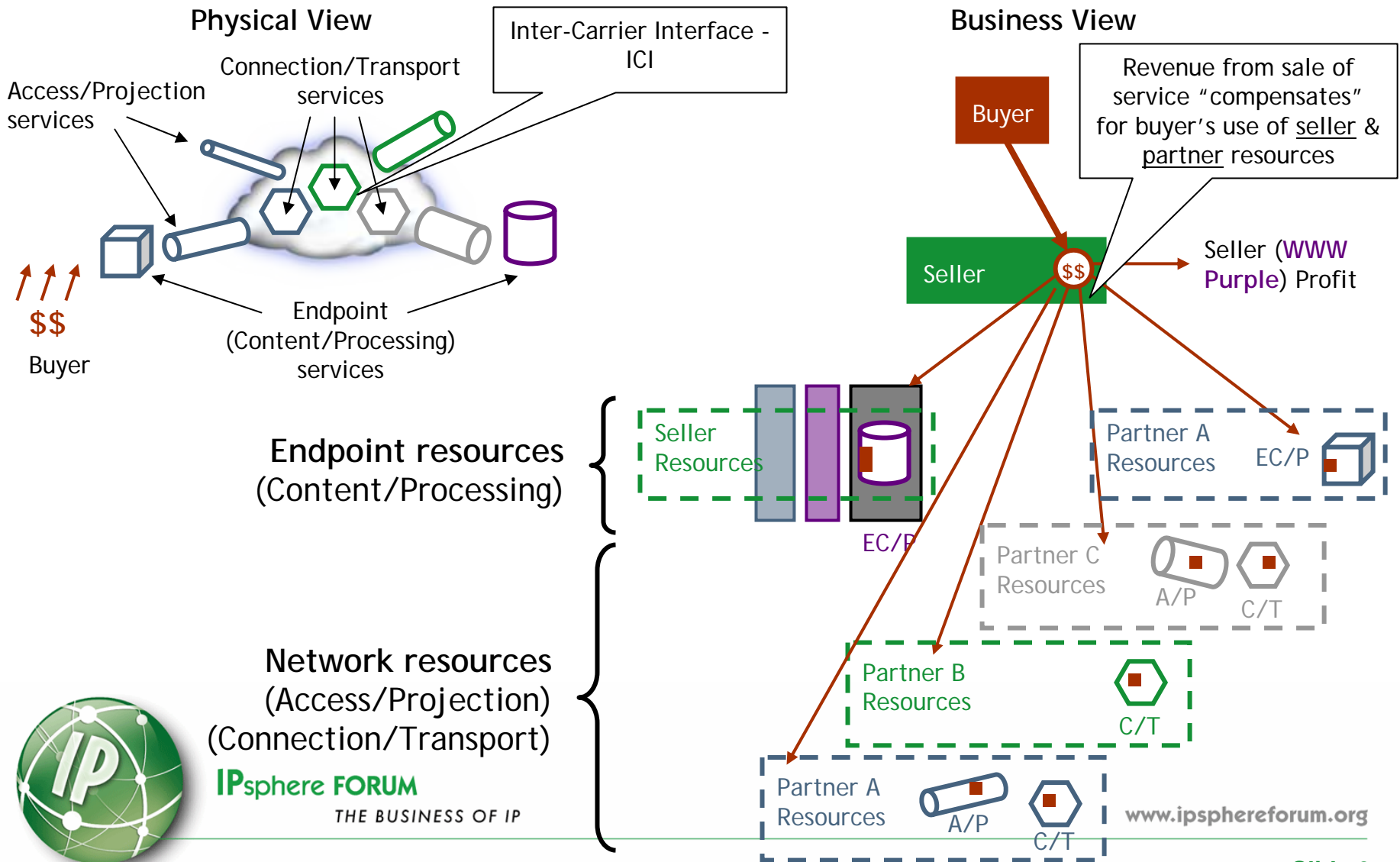


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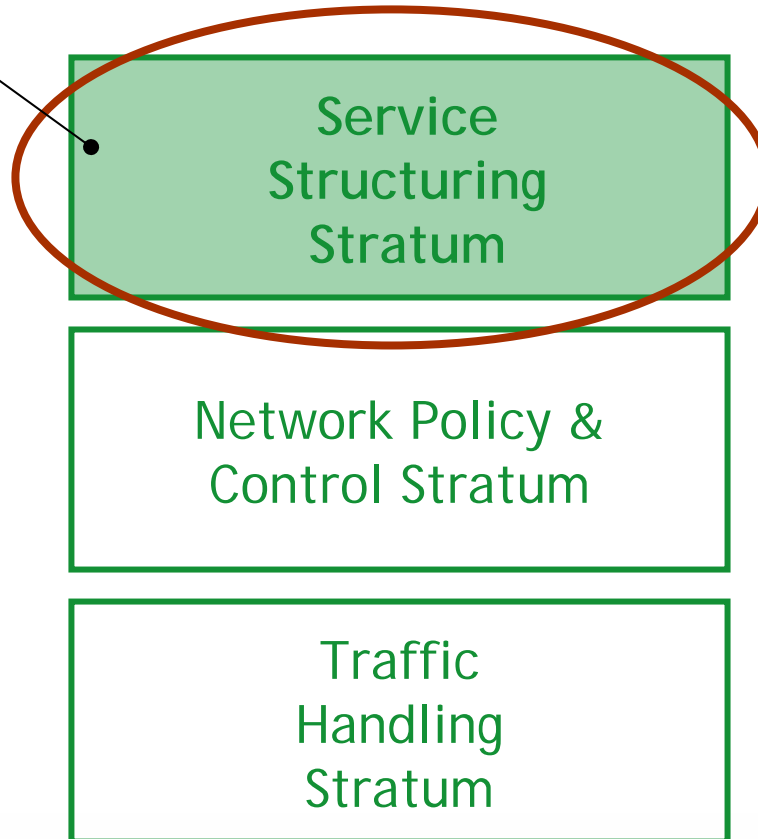
The IPsphere Business View



IPsphere Forum Focus

IPsphere Forum Focus

Outcome is an IT framework; not a set of network specifications



Business framework to maximise return from NGN capabilities - leverages SOA work (W3C, OASIS, etc.) into Telecom NGN context

Network control & intra-operator policy mechanisms; IMS, TISPAN, TMF etc.

“Bearer” mechanisms from responsible bodies such as IETF, ITU, MFA, DSL Forum etc.



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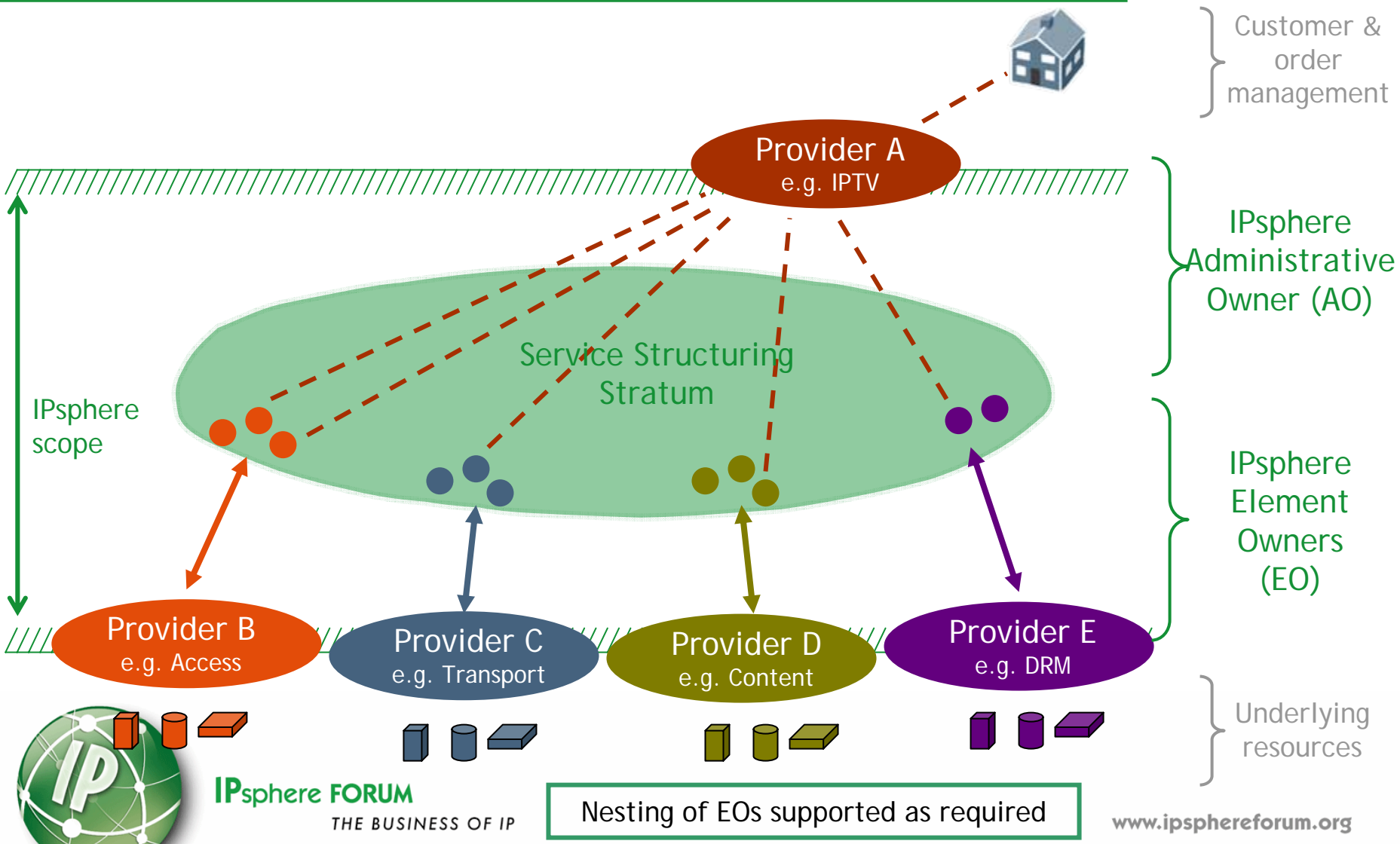
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IPsphere Fundamental Concepts

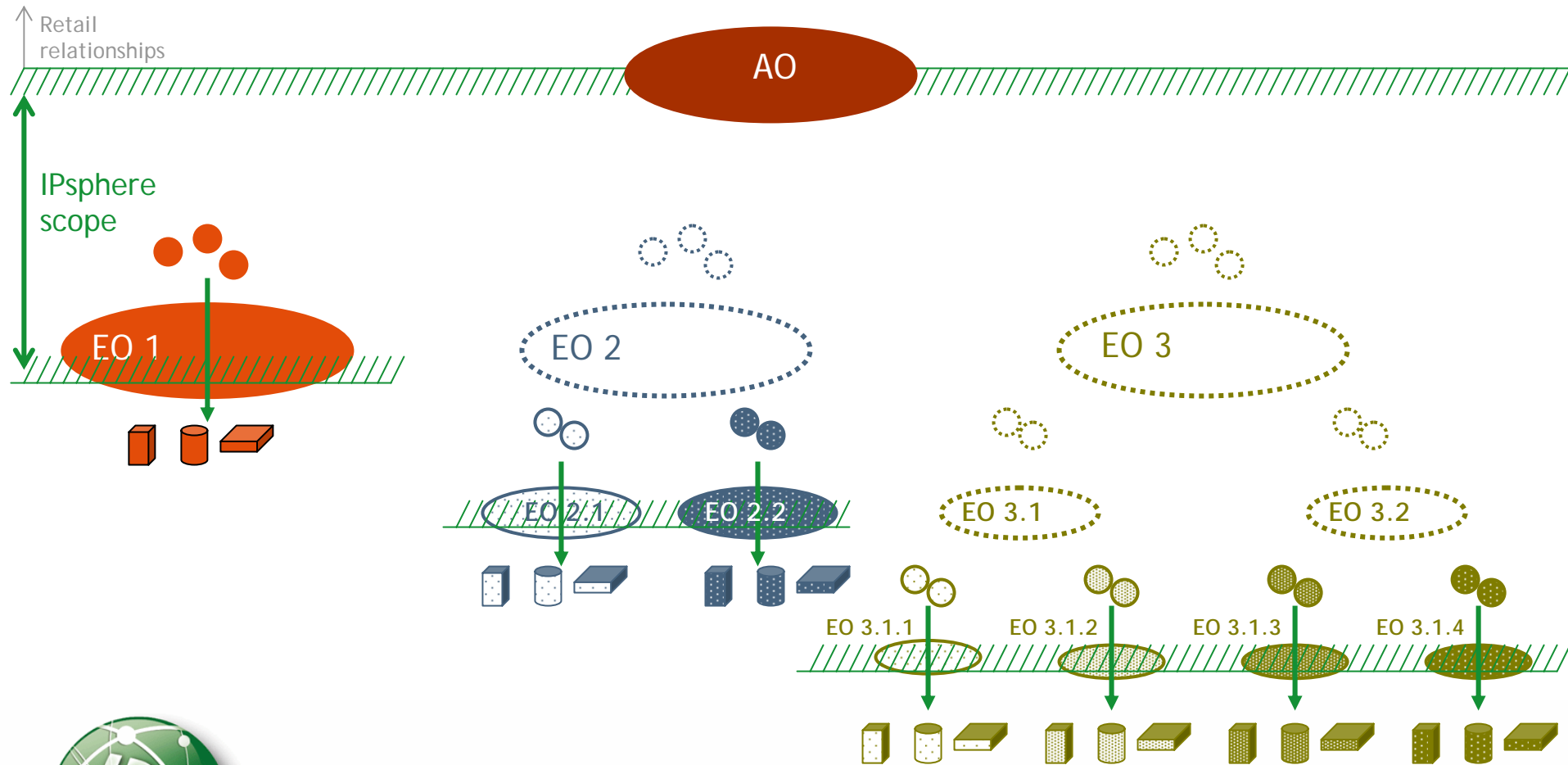
- Business-based service descriptions represent “external” offerings
- Translate descriptions to a set of resource behaviors that fulfill the functional requirements of those external service offerings
- Resource behaviors can
 - Represent both traditional network and IT service elements
 - Be contained completely within a single provider
 - Extend across provider boundaries
 - Single- or multi-technology
 - Single- or multi-vendor



High Level Roles



EO & Element Nesting



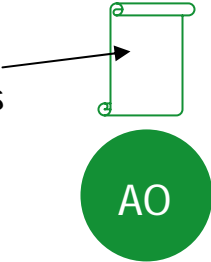
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Composition and Decomposition

Template representing external Service & its constituent Elements



Templates representing resource behavior of sets of technology resources



Template-based abstraction ensures:

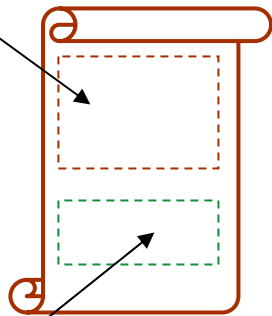
- Any service, any resource behavior can be represented
- Inherent capability to support blending of different technologies, multi-vendor resources to enable a service

Enables separation of functionalities to be readily designed and implemented in order to pre-empt or respond to public policy & regulatory imperatives

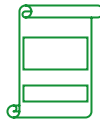


Harmonization of EO-AO Business Imperatives

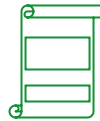
Fields describing Element's technical behavior;
Likely to be the same for many partners



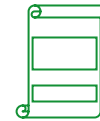
EO1



EO2



EO3



EOn

AO

In composing a Service, AO selects Elements based on the technical behavior, and - where relevant - upon the commercial terms offered to AO by the EO

Commercial terms are never exposed publicly

Optional fields describing the commercial terms under which the Element is offered by EO to given AO(s);
Likely to be different in order to reflect bilateral or multi-lateral commercial agreements between the EO and specific AOs



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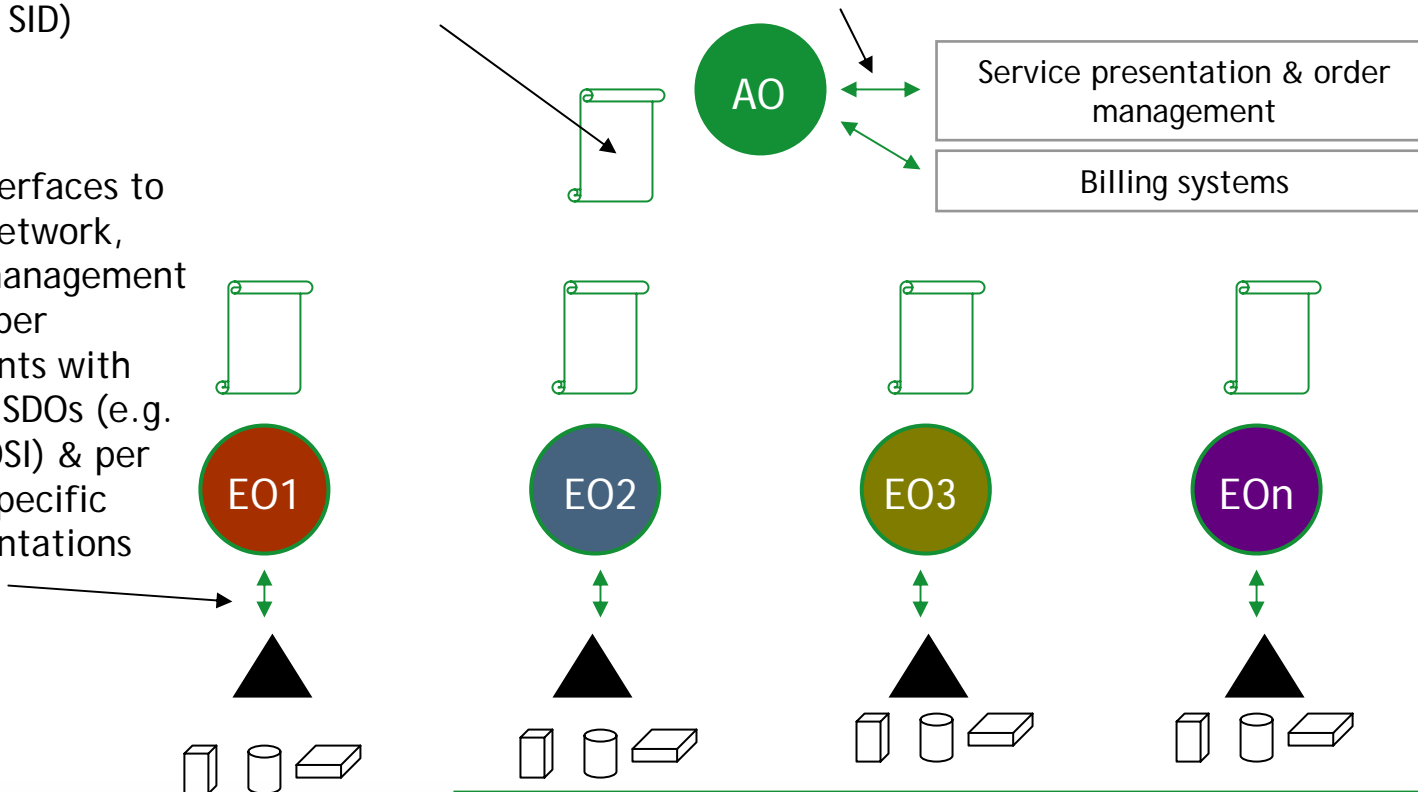
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Agreed Open Standard for Framework and Interfaces to Related Functions

Template fields anticipated to leverage industry standard information models (e.g. TMF SID)

Clear interfaces to OSS, BSS systems & process maps per agreements with relevant SDOs (e.g. ITU NGN OSS, TMF eTOM)

Clear interfaces to policy, network, device management systems per agreements with relevant SDOs (e.g. TMF MTOSI) & per vendor-specific implementations



Framework itself forms an agreed standard open to implementation by any company
 Clear, well understood interfaces to critical business functions, technology management systems & related sub-systems such as IMS



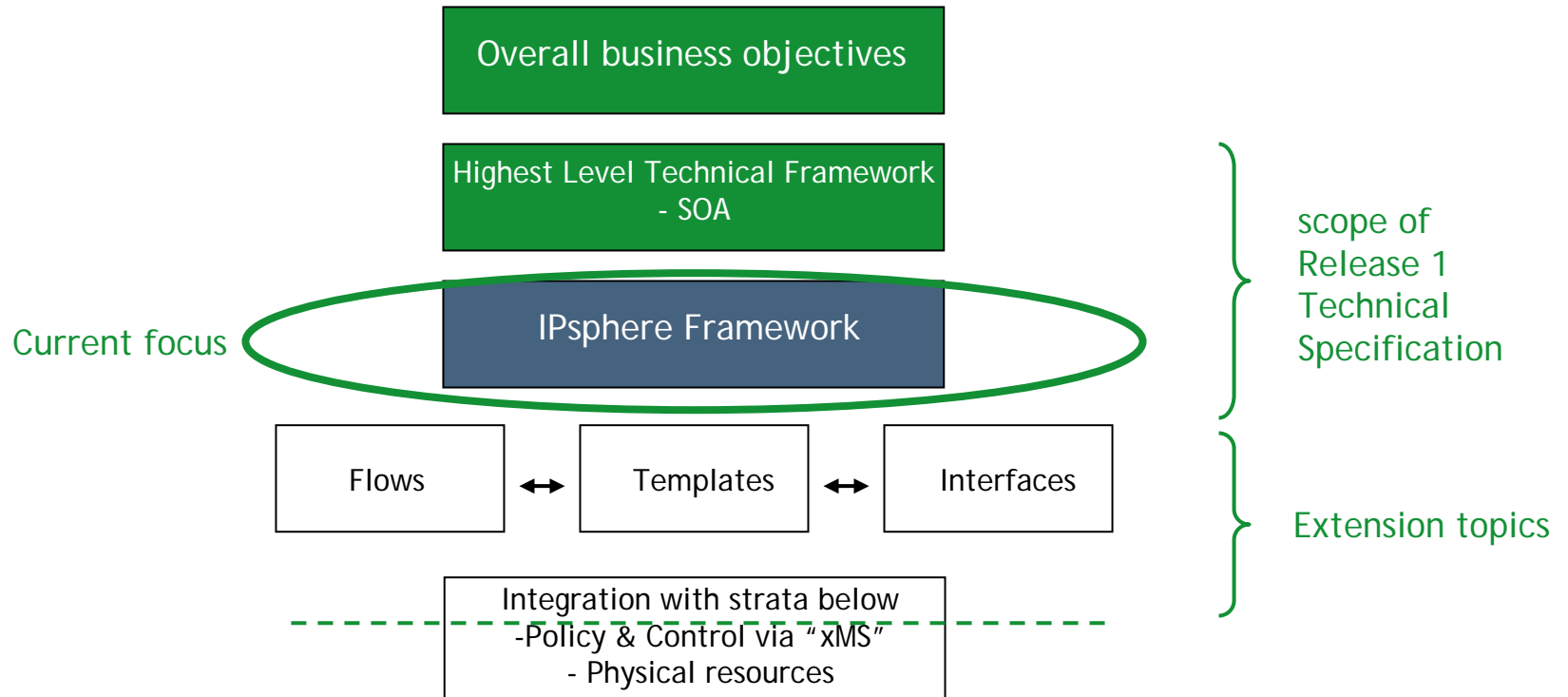
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IPsphere Framework Overview

- Framework Context and Components
- Element Publishing
- Service Architecting
- Element Selection
- Service/Element Activation
- Service Assure Phase



Framework in Context

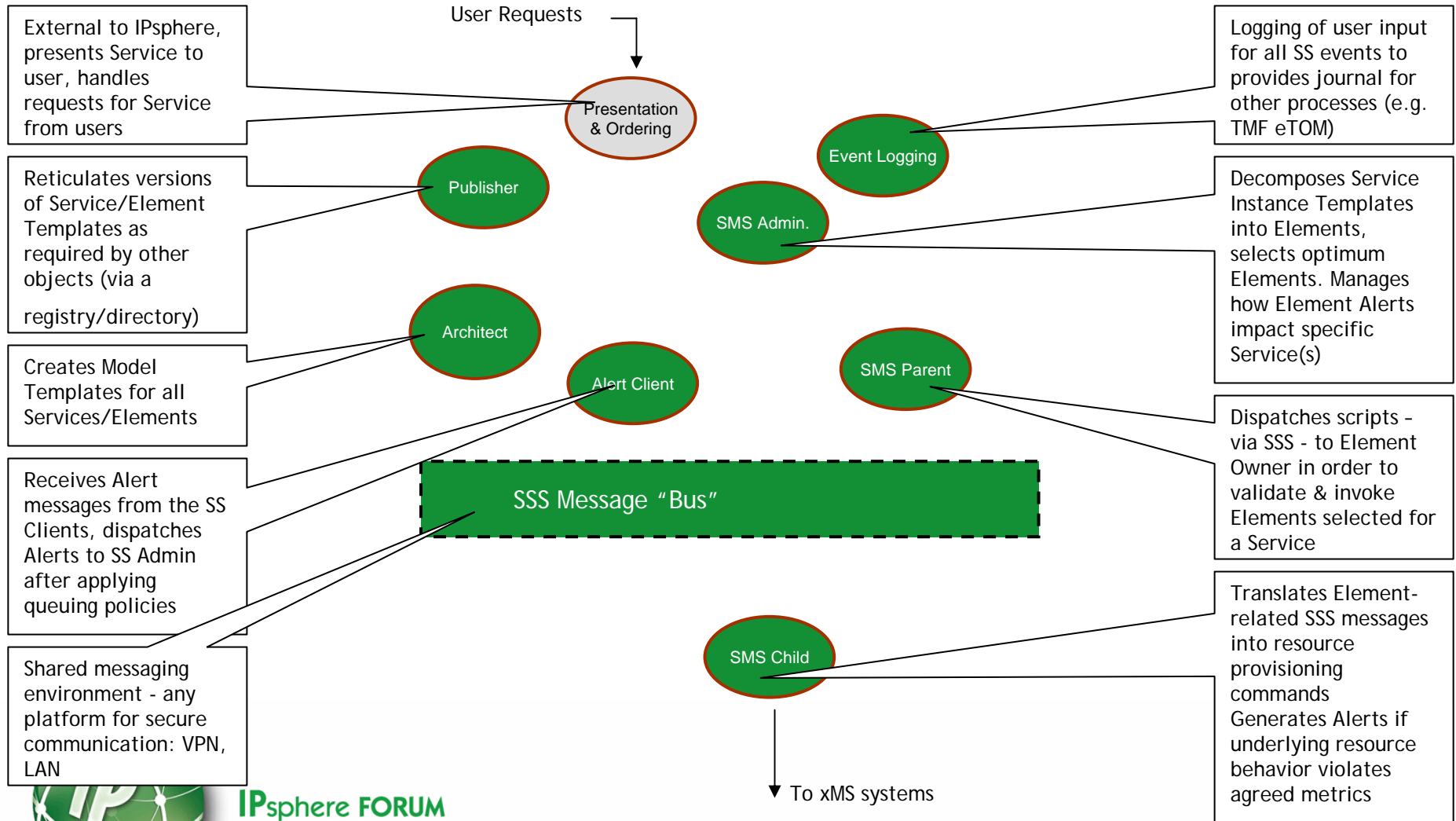


Decomposed, Non-monolithic Framework

- Enables providers to choose best-of-breed components
- Lowers barrier to participation > more innovators in IPSF validations, showcases etc.
- Facilitates integration of IPsphere framework with other software, hardware systems
- Facilitates diagnostics in validations, showcases etc, & enables certification in tests
- Allows multiple copies of key functional components to be run on different systems



IPsphere Framework Functions



Element Publishing and Visibility

- EOs publish and/or update Elements relatively infrequently
 - Element publication is out-of-band - assumed not to traverse SSS
- Elements are selectively visible to specific AO, or groupings of AOs
 - According to EO-AO commercial relationships
- 2 potential approaches to AO Element repositories
 - Distributed registry; e.g. a WS that appears as a directory
 - Central registry; e.g. directory of Elements maintained by third party

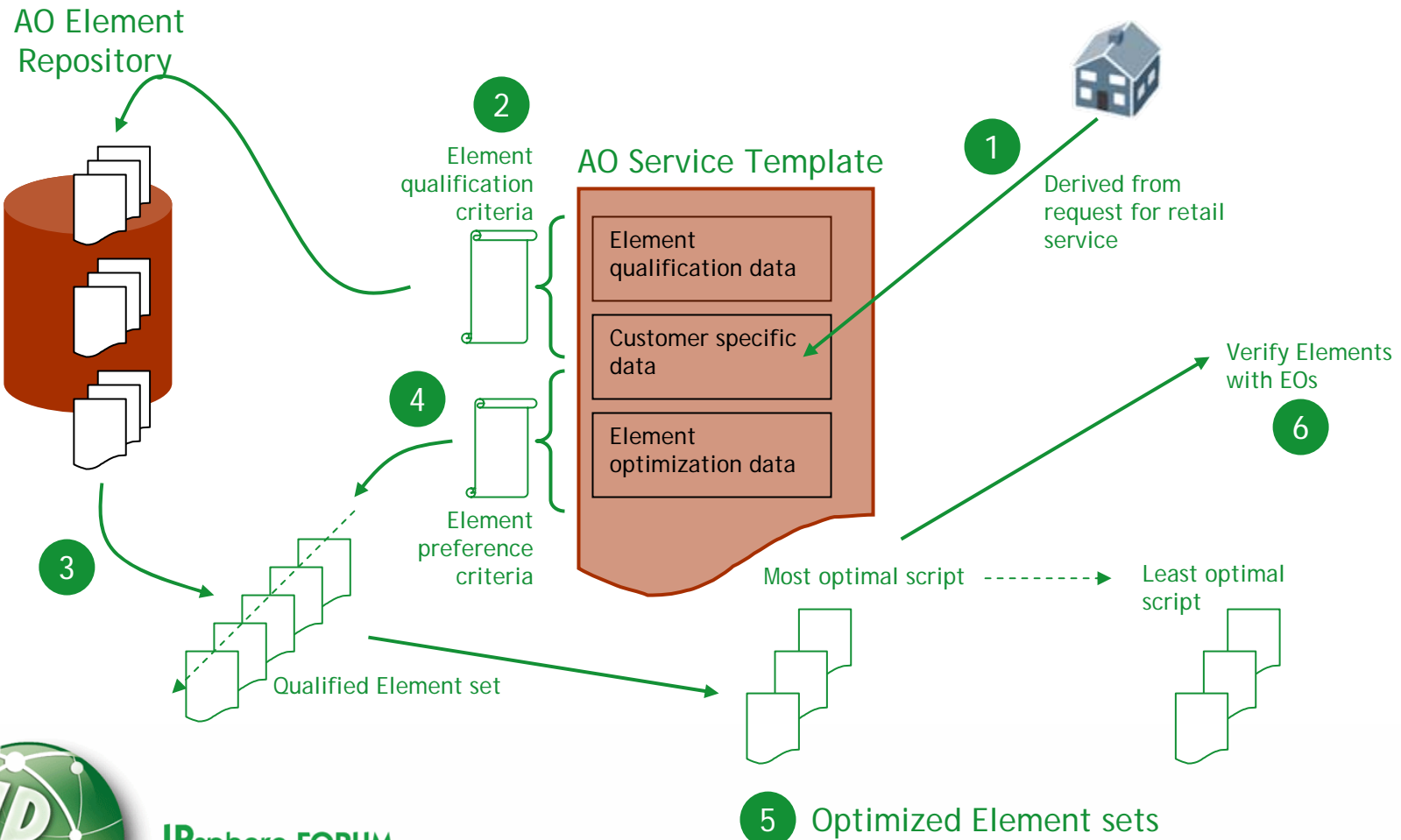


Service Architecting

- All presented Services and offered Elements are architected pre-order
 - No Service Provider interest in automating solicitation of custom offers
 - AO, EO are therefore always taking a “proactive” stance
- Possible for AO, EO to take “reactive” approach (via non-IPSF means)
 - Retail AO could “solicit” custom Elements from partner EOs
 - If a solicitation is made & positively responded to
 - Publication of the resulting custom Element(s) would be IPsphere in-scope
 - Custom Element should be visible ONLY to the original solicitor



Element selection



Element Selection Modes

- Selection of Elements to fulfill a specific retail service could be carried out
 - Dynamically - Elements selected post a request for service
 - Pre-selected - Elements specified explicitly when service is originally architected
 - Hybrid - some Elements dynamically selected, other Elements pre-selected
- Element selection “mode” for a service is an architect choice, influenced by
 - How often Elements are expected to be contributed (Element refresh rate)
 - Nature of the service - expectation of activation delay (immediate or deferred etc.)
- IPsphere will permit “Dynamic”, “Pre-configured” & “Hybrid”



High Level SSS Scope

- SSS in-band
 - Element verification
 - Element activation & de-activation
 - Element alerts
- Out-of-band to SSS
 - Element publication
 - Synchronization of AO Element repositories
 - Request from retail customer
 - Billing & settlement
- Extension topic: Authentication of SSS “talkers”
 - SSS must be a trusted environment for AO, EO message exchange



Element Activation

- Initiated through Setup/Execute/Assure message sequences from AO's SMS Parent to each EO's SMS child
- Ensure that no Element proceeds to Execute before all elements have successfully Setup
- Ensure that no Element proceeds to Assure before all elements have successfully Executed
- Avoids AO potentially incurring costs prematurely
- Avoids exiting of Setup, Execute phases until all Elements attain same effective state



Assure Phase Alerts, Monitoring and Maintenance

- Assurance at the Service level is responsibility of its AO
- In-service (IPsphere Assure Phase) Alert handling
 - By definition no faults that aren't detectable at the Element level
 - Must correlate Element faults to consequent AO Service impacts
 - Alert handling alternatives can be a property of the Element offer
- End-end monitoring can be an Element in its own right
 - C/P Element could be additional cost item
 - Generating Assure Phase Alerts per preset tolerances
- Maintenance windows may be approached in similar fashion





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IPSF organizations &
milestones

IPsphere Forum Membership



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IPsphere Forum Structure

IPsphere Forum Board

Chair: Kevin Dillon (Juniper)
Vice Chair: Monique Morrow (Cisco)
Treasurer: Omar Elloumi (Alcatel)

Secretariat (AMS)

Laura Nugent - Executive Dir.
Shonna Anderson - Project Mgr.

Service Provider committee

Chair: Keith Dickerson (BT)
Vice Chair: Christian Jacquenet (FT)

Work Program committee

Chair: Tom Walsh (Juniper)
Vice Chair: Mike Lerer (Avici)

Marketing committee

Chair: Donal Morris (Red Zinc)
Vice chair: Todd Shimizu (Juniper)

Business Dimensions WG

Chair: Kevin Dillon (Juniper)
Vice chair: Christian Jacquenet (FT)

Reference Architecture WG

Chair: Ian Stanley (Telstra)
Vice chair: Li-Jun Yao (Telstra)

Reference Implementation WG

Chair: Matt Ford (BT)
Vice chair: TBD



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Plan of Record 2006

	Q1 06	Q2 06	Q3 06	Q4 06	
Workshops	IPSF Burbank Feb 13-15	IMS I Paris IPSF Sophia Antipolis May 15-17	Object Model Sunnyvale IMS II Ottawa PP LSP Montreal	IPSF Oslo Sept 12-14	IMS III Whippany Data Model Sunnyvale IPSF London Dec 11-13
Publication		IPsphere commercial framework		Release I technical specification	
Implementation		Tokyo Showcase		London Validation	
Liaisons		ITU-T	OASIS	ETSI	



Anticipated Plan of Record 2007

	Q1 07	Q2 07	Q3 07	Q4 07
Workshops	IPSF New York Interim WS TBD	IPSF Berlin Interim WS TBD	IPSF France Interim WS TBD	IPSF China
Publication		Release 2 technical specification IMS-NGN specification		Release 3 technical specification
Implementation	R&D Platform P1	Public Showcase - Timing TBD	R&D Platform P2	R&D Platform P3
Liaisons	TMF ITU-T SG13	GSMA OMA	FMCA	Additional potentials: GGF LAP MSF MFA



Call to Action

- IPsphere represents the key industry forum defining the viable business layer for the delivery of services over next-generation infrastructure
 - Both intra-provider and pan-provider
- Participation in the Forum allows input into how the mechanisms are defined and gives insight to the future shape of the industry





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Thank You