Please double-click on the note callout for speaker notes!

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ExperiaSphere and IPsphere

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IPsphere 101

- An initiative of the IPsphere Forum (IPSF) since merged with the TMF
- Primary focus was on componentization of services to support pan-provider syndication of service elements
- Strong provider engagement in the activity
- Explicit integration with IMS
- Worldwide demonstration (CONTENTsphere) conducted in 2008

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What is Required by IPsphere?

- Each contributing operator must expose their contribution as Elements
- Each retail provider must create one or more Services from Elements
- Element owners manage against their own Element SLAs and report violations
- Elements must be linked downward into management systems in some way

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What is ExperiaSphere?

- A set of open source Java tools to construct services by authoring a Service Logic Execution Environment (SLEE), a Service Management Execution Environment (SMEE) or both
- Data-model-independent in that it can accept its information from any data model
- Standards-supporting in that it can support any standard management or component interface

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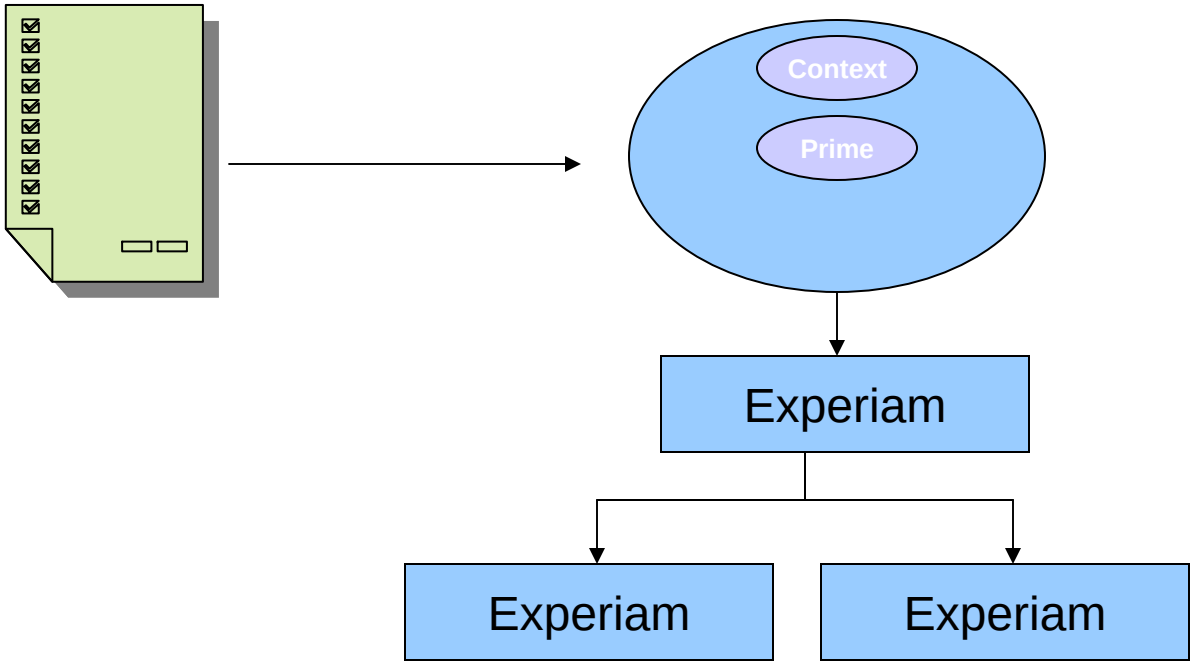
ExperiaSphere “Elements”

An IPsphere Element maps to an ExperiaSphere Experience created by a Service Factory…



…which maps to a structure of “Experiam” software objects
and likely terminates in a “ControlTalker” to the management API

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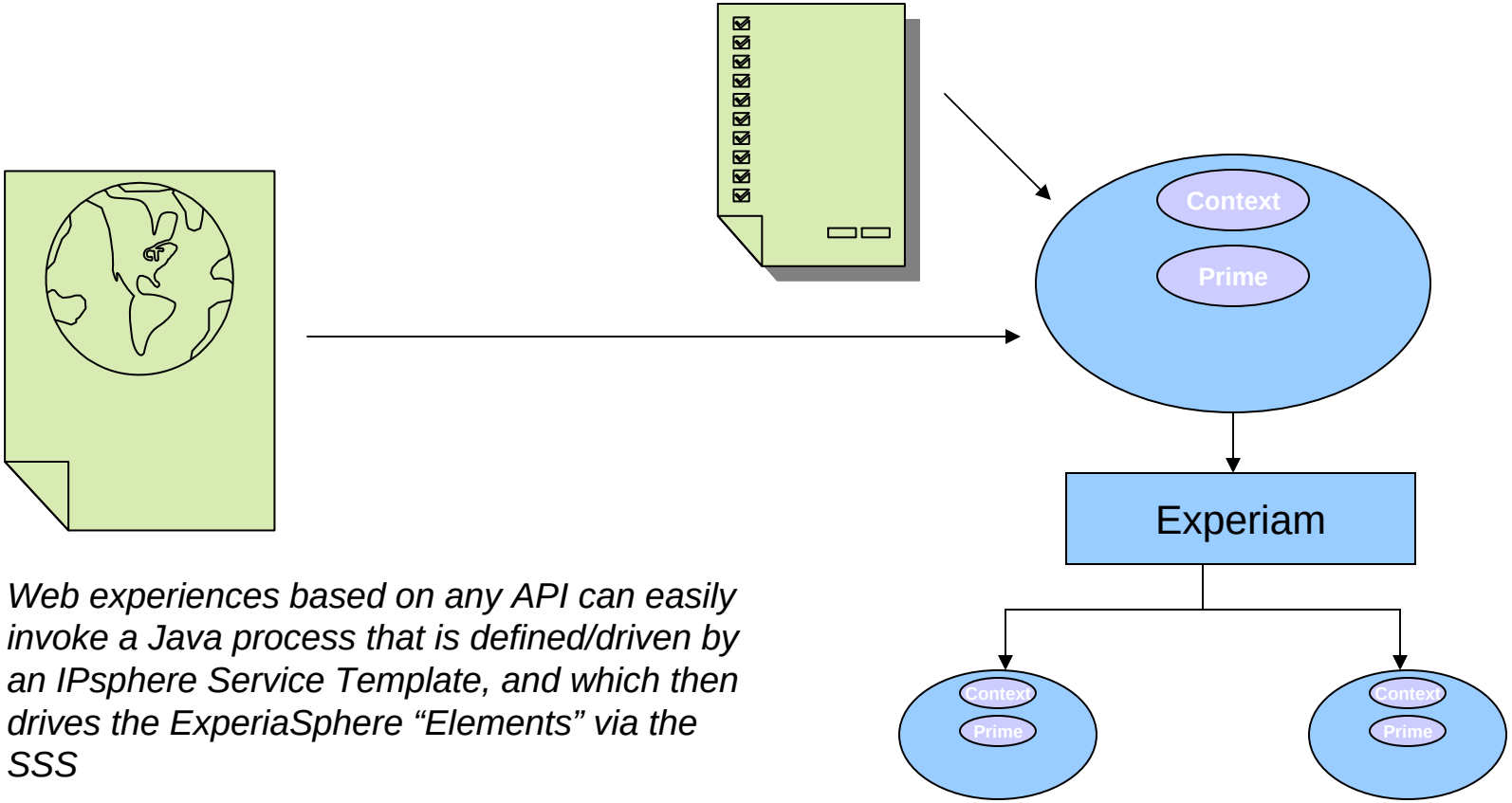
ExperiaSphere and Services



Web experiences based on any API can easily invoke a Java process that is defined/driven by an IPsphere Service Template, and which then drives the ExperiaSphere "Elements" via the SSS

"Proxy" Experiams represent contributed components and are linked to "Roles" published by the contributors in a static or dynamic way

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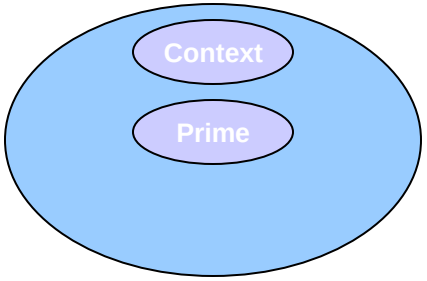
Inside the Implementation



•An ExperiaSphere “Experience” is a set of Experiams inside a Java program that creates a “Service Factory”. The Experiams are represented by a “Prime” Experiam that defines the role of the application (Element or Service, in IPsphere terms).

•A CONTEXT object provides a linkage between an external message environment that controls the experience and the Prime Experiam through a set of Messengers (one of which could support the IPsphere SSS exchange).

•Standard Java logic inside the application can select what Experiams (select Elements, fractal decomposition, etc.) to activate.

•IPsphere applications are authored using Experiams and Java and are easily developed and quickly prototyped.

•Experiams can encapsulate management APIs to control resources and also OSS/BSS functions

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Content Distribution in IPsphere

- From the first, IPsphere considered things like DRM, identity, and codec validation to be a rightful part of content distribution
- The need to have “functional exchanges” in content distribution was further recognized in the Content Distribution Use Case work, approved by the SPC, and was the driver behind the notion of “functional Elements”
- The functional exchanges described in the use case are a mixture of service management and service logic exchanges
- ExperiaSphere accommodates this

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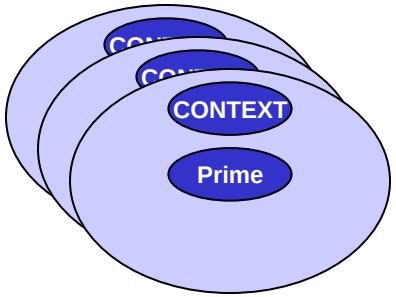
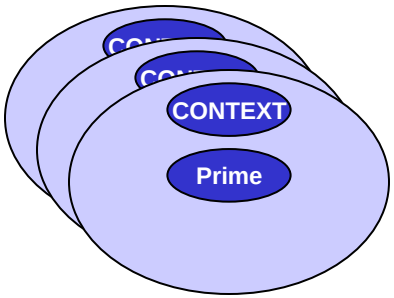
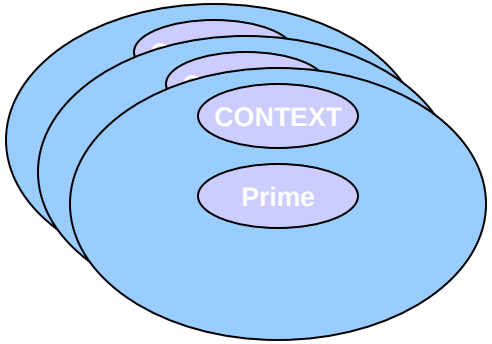
CONTENTsphere as Experiams

Access Elements

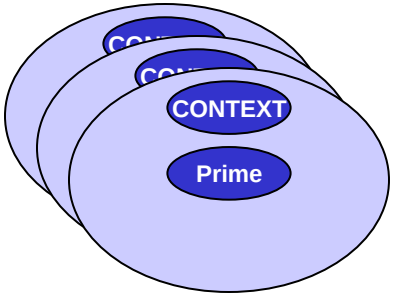


Transport Elements





Services



Content Elements

Providers can contribute Experiams to create their offerings, in which case these Experiams are simply referenced in the private portion of the template via a URI.

They can also contribute traditional IPSF logic, in which case the Experiam can bind to it via the SSS, so a mixture of Experiams and traditional non-Experiam templates can be used.

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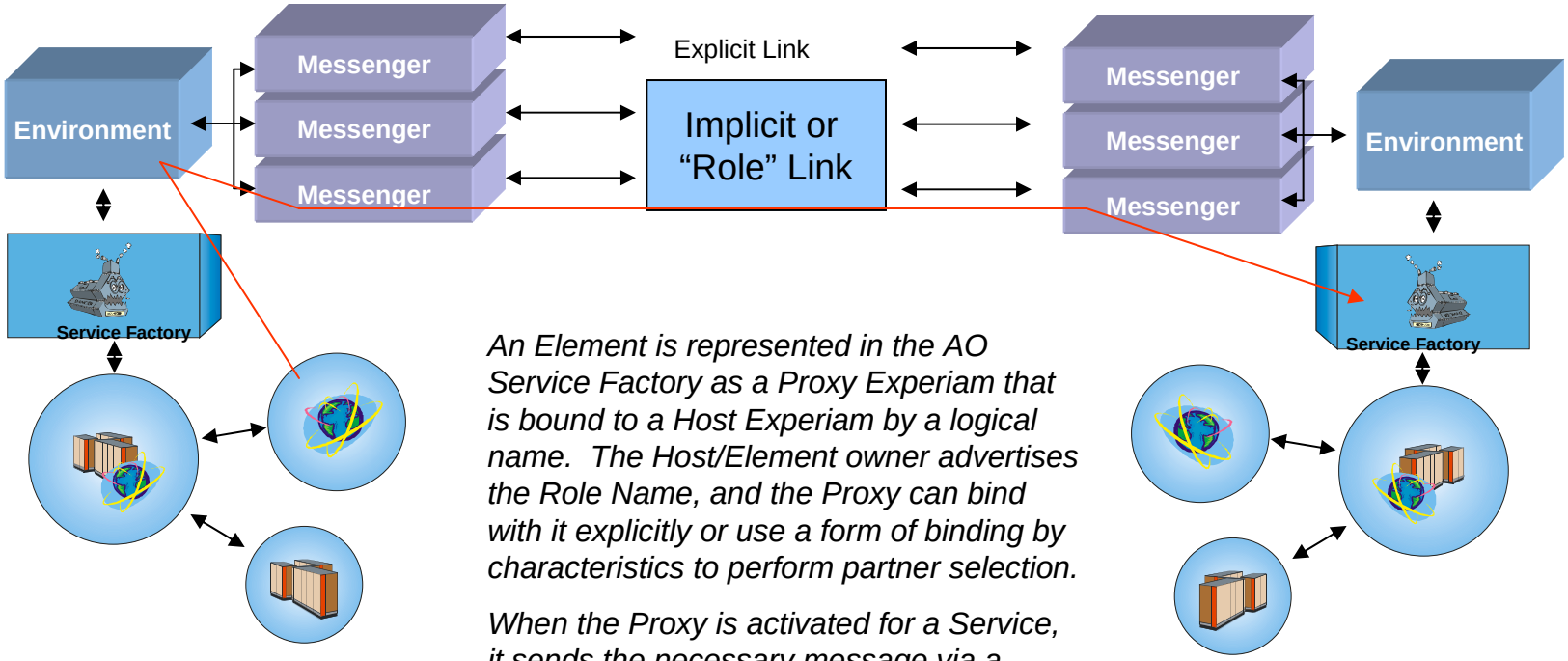
Service-to-Element Linkage



An Element is represented in the AO Service Factory as a Proxy Experiam that is bound to a Host Experiam by a logical name. The Host/Element owner advertises the Role Name, and the Proxy can bind with it explicitly or use a form of binding by characteristics to perform partner selection.

When the Proxy is activated for a Service, it sends the necessary message via a Messenger to activate the Element (this is an IPSF SSS exchange)

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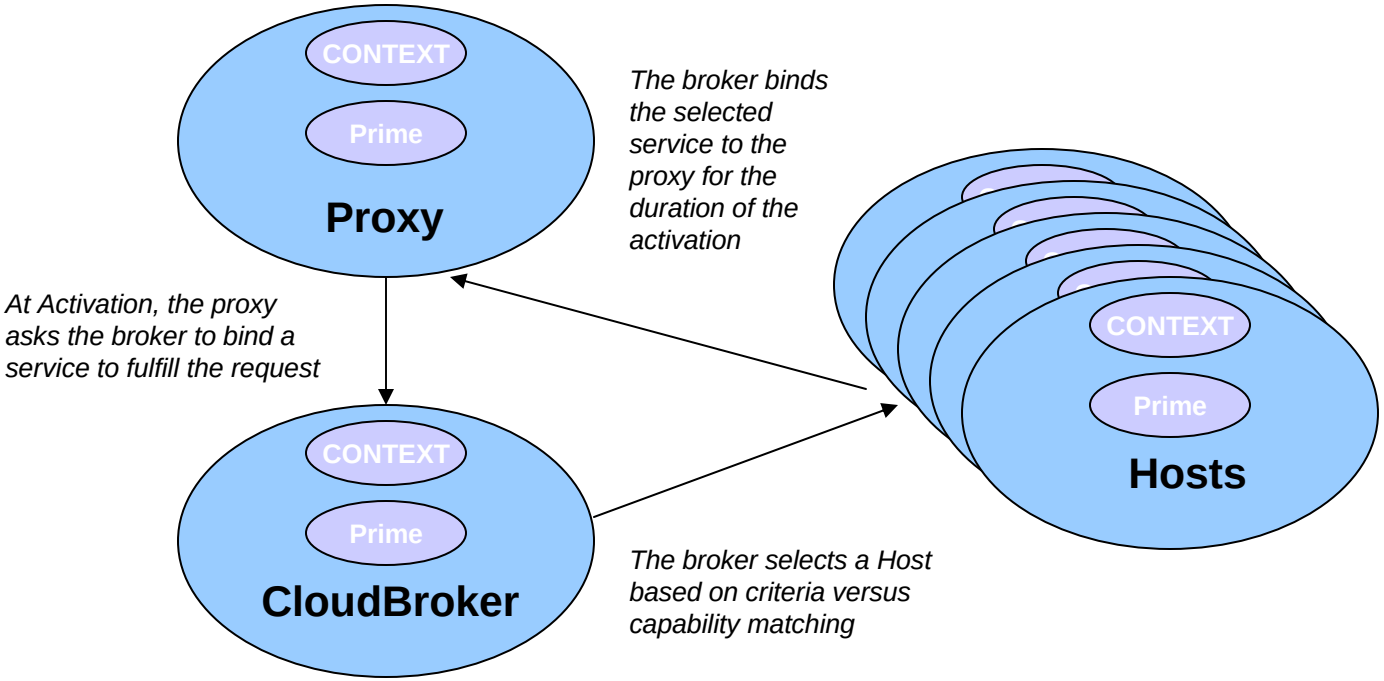
A Graphic View of Selection



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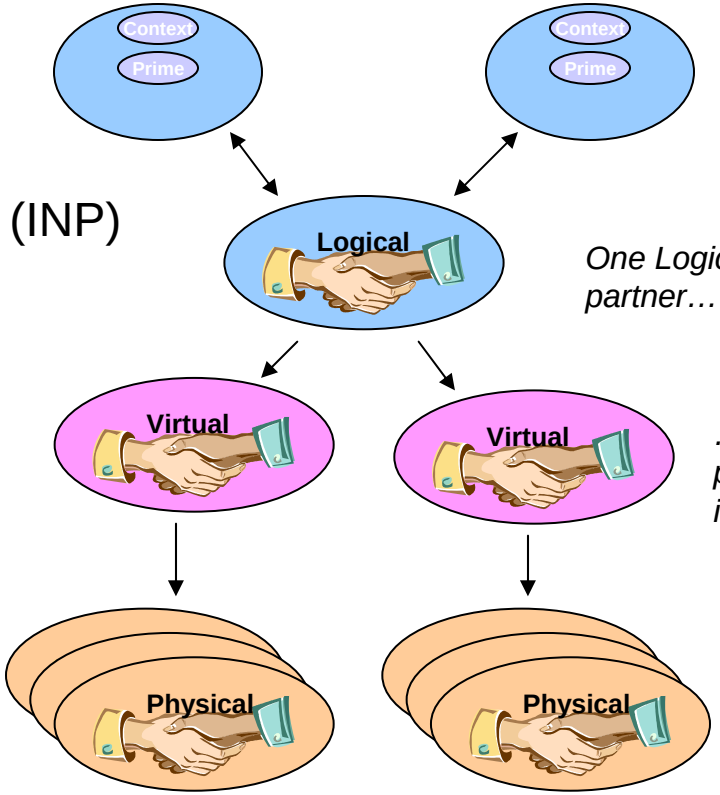
IPsphere Adjacencies = INPs

Access/Transport Elements

Internetworking Point (INP)
"Virtual Element"



One Logical INP per interconnect partner…

…divides to virtual INPs (one set per partner) by the type of interconnect behavior…

…and finally into the real NNIs that provide the connection

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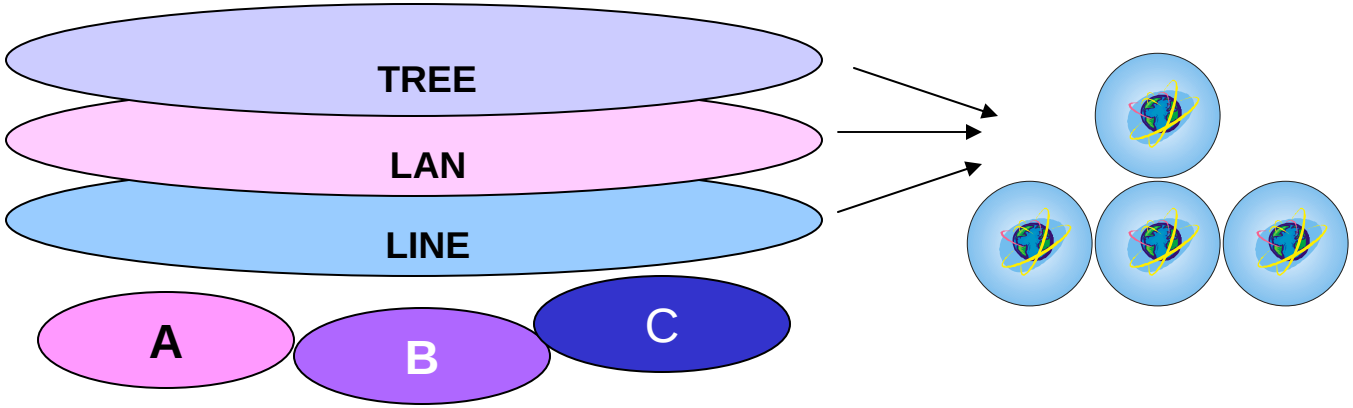
Using Behavior Communities to Abstract Multi-Provider Services



Partner groupings with a common virtual INP (common behaviors) can create a Behavior Community that is represented in ExperiaSphere as an Element and which then decomposes into per-provider commitments

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IPsphere is in a Leadership Position!

- Standards processes are focusing more on service management than service logic (TMF SDF for example)
- Without service logic there will be nothing to manage
- IPsphere's Elements can represent both management and logic processes and thus can form the basis for orchestrating either SMEE or SLEE behavior **without any changes in the process other than the functional behavior of Elements already described**
- ExperiaSphere is simply a vehicle to demonstrate what IPsphere has already defined, one of several tools that could be used
- Others should be encouraged to contribute open source software in a similar way and CONTENTsphere should expose as many approaches as possible

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What ExperiaSphere Can Do

- Provide a framework for implementing IPsphere trials and tests that can be done quickly and tested easily
- Serve as the basis for a true production implementation that is automatically harmonized with the TMF
- Harmonize easily with OMA, GSMA

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