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Version 2: Feb 2009

A Developer Program Partnership through ExperiaSphere

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ExperiaSphere is…

- An open source project of CIMI Corporation aimed at creating a Java-based tool set to author Service Logic and Service Management Logic as a Next-Gen Networks Services Architecture (NGNSA)
- A means of virtualizing service and management logic to be independent of resources
- A way to control resource access and security
- A path to generating wide developer support without creating any risks of stability or insecurity

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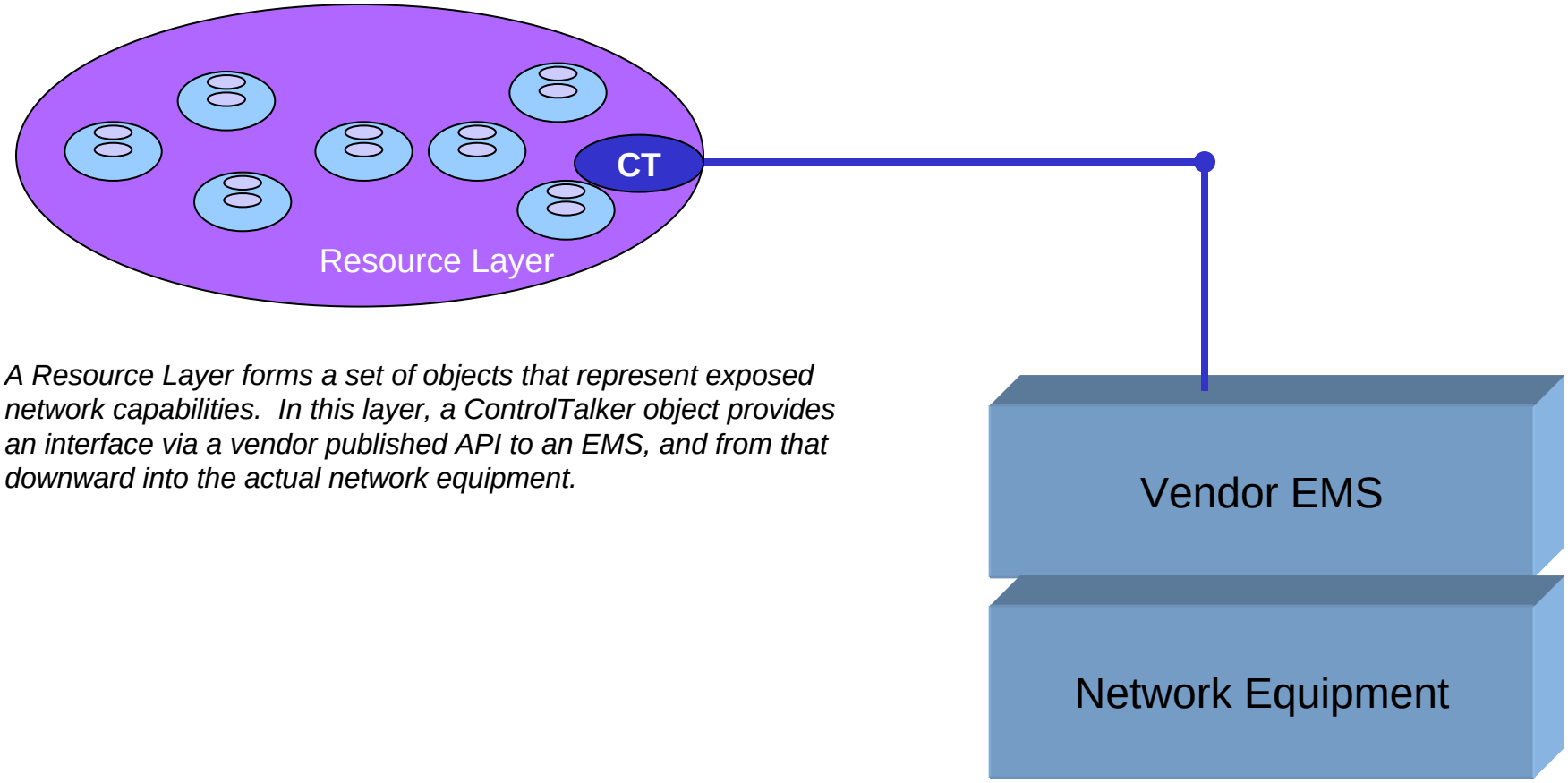
ExperiaSphere and Management APIs



A Resource Layer forms a set of objects that represent exposed network capabilities. In this layer, a ControlTalker object provides an interface via a vendor published API to an EMS, and from that downward into the actual network equipment.

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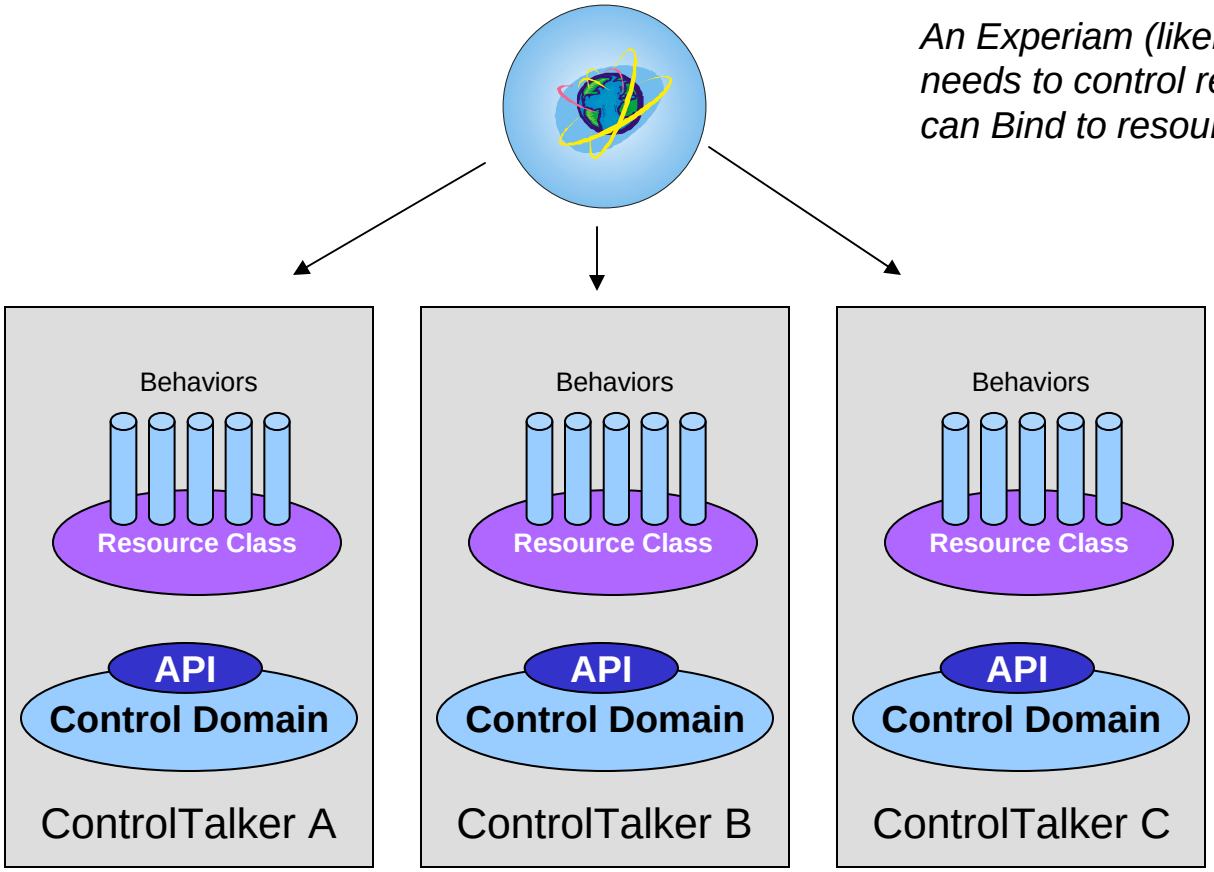
ControlTalker Binding



An Experiam (likely a Service Experiam) needs to control resources via Behaviors, so it can Bind to resources in two basic ways:

- *Based on the name of the ControlTalker ("ControlTalker A")*
- *Based on the Resources that the ControlTalker exposes ("I need point to point virtual LINE")*

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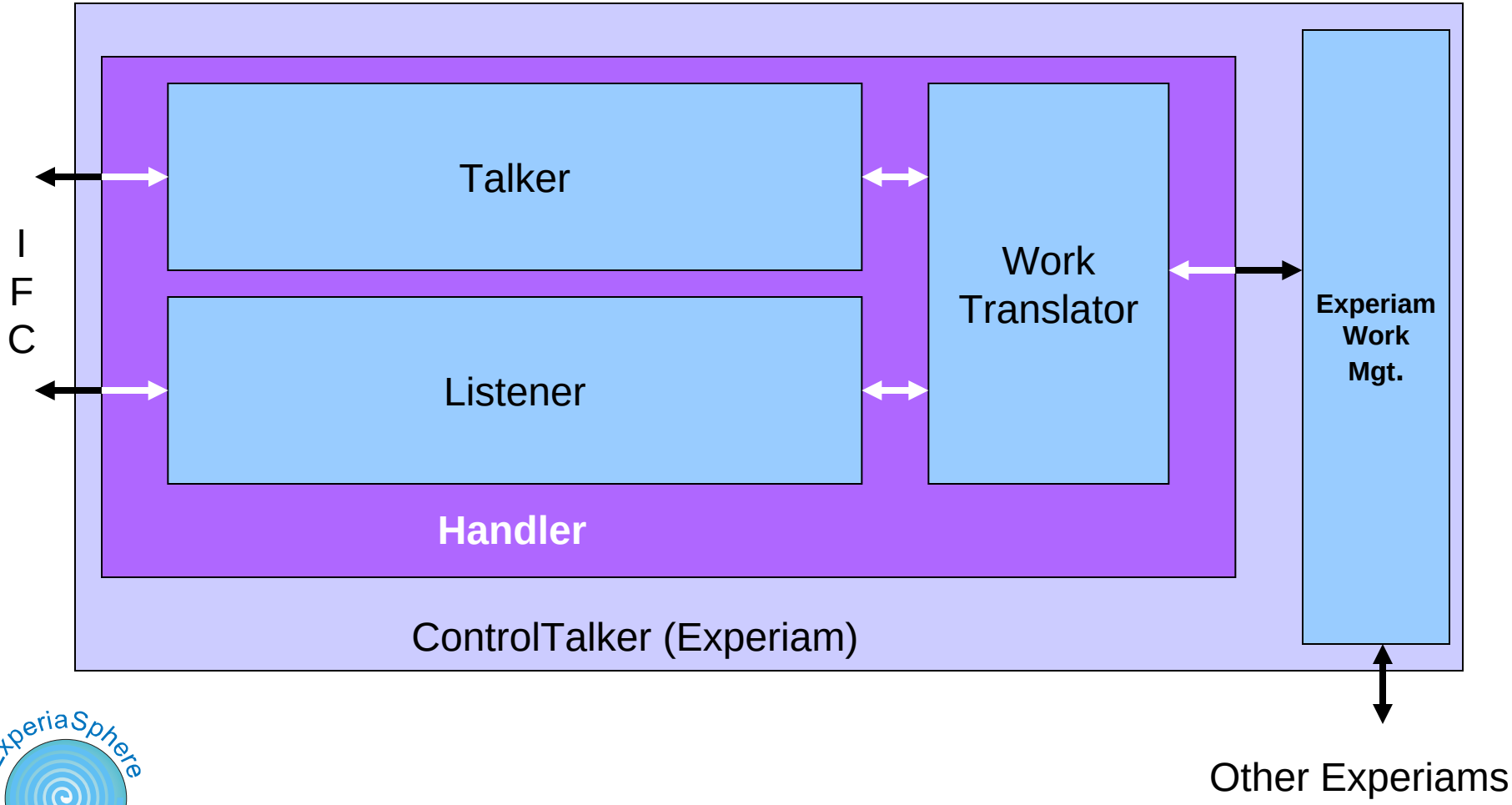
ControlTalker Structure Overview



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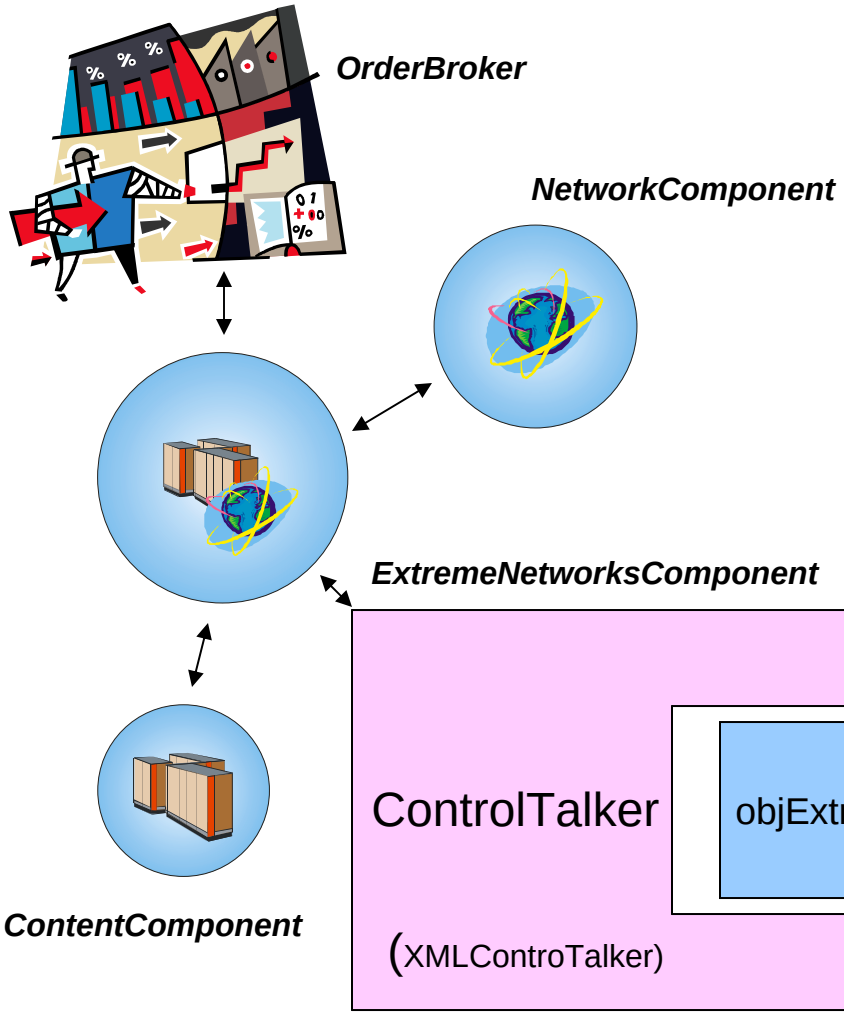
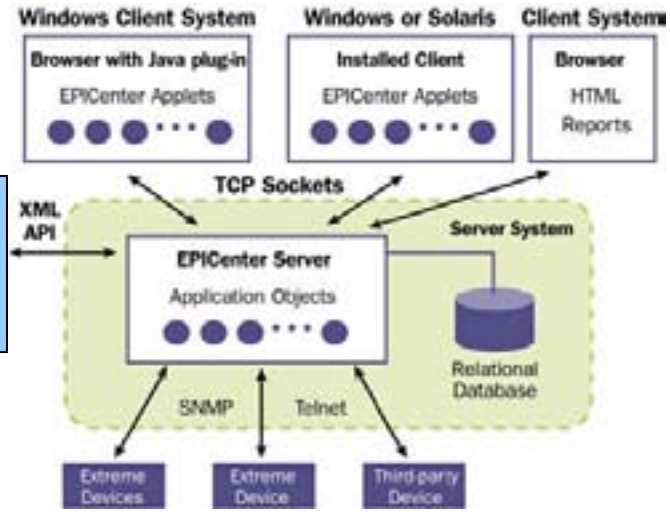
Extreme Networks' EPICenter: Our first ExperiaSphere network partner





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Making the EMS Connection

- In most cases, the interface to vendor equipment would be via a management system API
- A “ControlTalker” object provides a link between this API and Experiams that represent primitive services and features
- The ControlTalker “exports” a set of Behaviors that represent functional capabilities
- The Resource Plane Experiams create a collective Behavior set available to the Service Plane
- The normal “input” to a ControlTalker is XML, and so any API that uses XML is readily adapted to work in this structure

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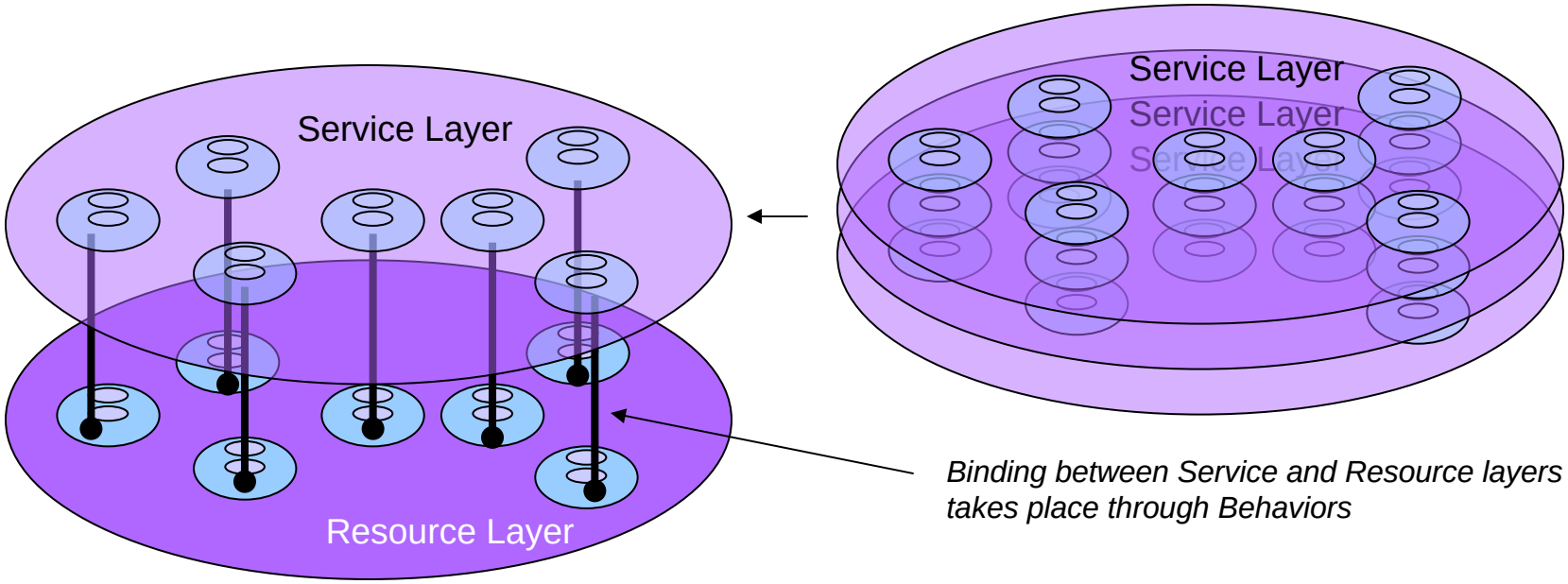
Developers and Resource Control



Developers would be given the ability to construct their own service layers. These service layers would be created using what is in effect a virtual resource layer. A given developer could "see" a subset of the Experiams in the Resource Layer and thus have only a subset of the capabilities exposed by the owner. Each Experiam in the Resource Layer must be "virtualized" into the Service Layer, and access to resources occurs by allowing Experiences in the Service Layer to access a virtual resource, which then is linked to the real resource Experiam in the Resource Layer.

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Developing Services

- Each network domain with the ExperiaSphere-NMS linkage has its own Resource Plane
- Each Resource Plane exposes a set of “Resource Experiams” in the form of a Behavior repertiore
- A service provider establishes one or more Service Planes
- Each Service Plane can contain links to one or more Resource Experiams in one or more Resource Planes by binding to Behaviors
- Service and service management logic authored in a Service Plane can influence only resources that are represented by exposed Experiams there
- All Service Plane access to resources is created by linking a Service Plane Experiam to a corresponding Resource Plane Experiam through a Behavior
- Resource Plane Experiams can be “remote” and linked through a Proxy/Host Experiam pair for isolation
- Service logic can be authored to “bind” this link to any conforming Resource Plane, so a generic set of services can be ported across multiple providers as long as there is a compatible Service/Resource binding
- Service Planes can run on any system with a Java virtual machine

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Making this Work

- A ControlTalker link to the EMS environment will be required
  - Java Class at the ExperiaSphere level (normally)
  - Some API (hopefully based on XML) from the management system
  - Linkage between the two, such as a simple XML-over-HTTP
- An architecture for exposing network capabilities as services (Experiams) will be required
  - Some thought on service componentization is a good idea here to promote maximum flexibility and reusability
- A toolkit will be created from the combination and made available to developers
  - Remember, ExperiaSphere is CDDL-licensed, so commercial components can be mixed with open source where necessary
- Network operators would create their own Resource Planes, expose their Resource Experiams, and coordinate the access of each Service Plane to those Experiams

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We Need Help!

- Equipment vendors who are prepared to work to expose management APIs via Experiams (we have a questionnaire available to help assess what's needed here)
- Software/application vendors who are prepared to create Experiams around their interfaces and elements
- Enterprise equipment and software vendors interested in an ExperiaSphere model of collaboration and Unified Communications, or other applications
- Java programmers who want to participate in the service convergence revolution
- Contact tnolle@cimicorp.com for details on how to get involved!

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Thank you!

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