Version 1: June 2009. This is a public document and may be distributed freely.
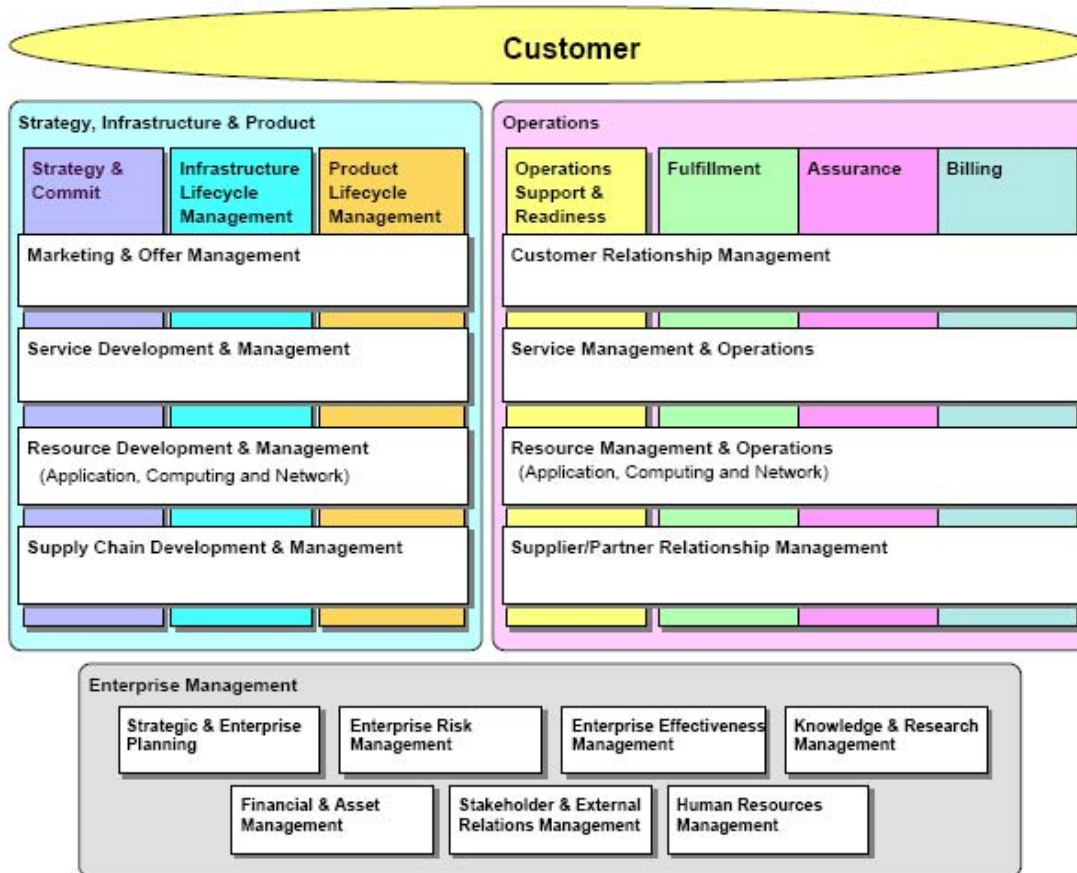
ExperiaSphere and TMF

The TMF

- World's primary standards body for OSS/BSS/NMS

- Has incorporated the Java Advanced Intelligent Network (JAIN) work as OSSJ

- Has incorporated the IPsphere Forum work

- Is currently restructuring to modernize its vision of service management

The TMF View: eTOM

Customer

Strategy, Infrastructure & Product

Strategy & Commit	Infrastructure Lifecycle Management	Product Lifecycle Management

Marketing & Offer Management

Service Development & Management

Resource Development & Management
(Application, Computing and Network)

Supply Chain Development & Management

Operations

Operations Support & Readiness	Fulfillment	Assurance	Billing

Customer Relationship Management

Service Management & Operations

Resource Management & Operations
(Application, Computing and Network)

Supplier/Partner Relationship Management

Enterprise Management

Strategic & Enterprise Planning	Enterprise Risk Management	Enterprise Effectiveness Management	Knowledge & Research Management

Financial & Asset Management	Stakeholder & External Relations Management	Human Resources Management

- *"Matrix" of horizontal and vertical subdivisions*

- *Captures management and operations view in full*

- *Widely adopted at OSS/BSS level*

- *Integrated into ITU management standards*

- *Supported by most vendors who have product offerings in this space*

ExperiaSphere

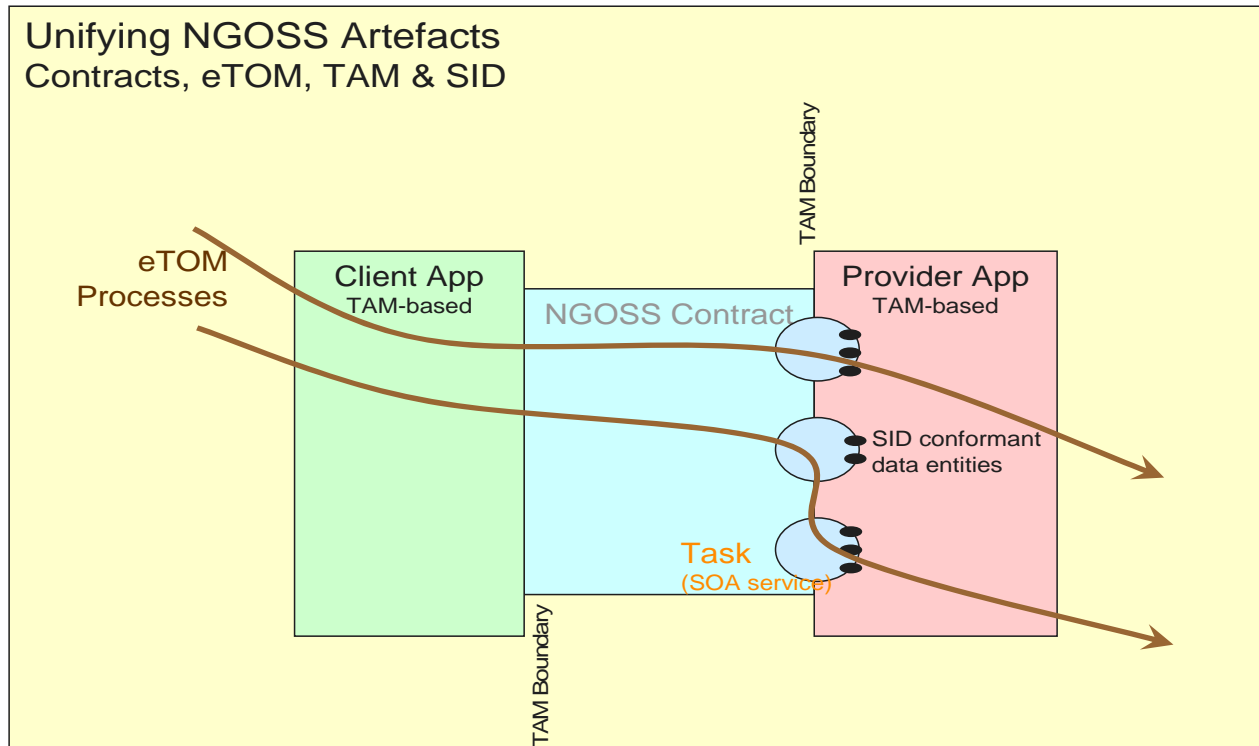Think Outside the Bit

Specific TMF Areas of Interest

- NGOSS Contract – Orchestration and service composition

- Service Delivery Framework (SDF) – Service management and modeling of componentized services

- Multi-Technology Operations System Interface (MTOSI) – Inter-component and device-independent management
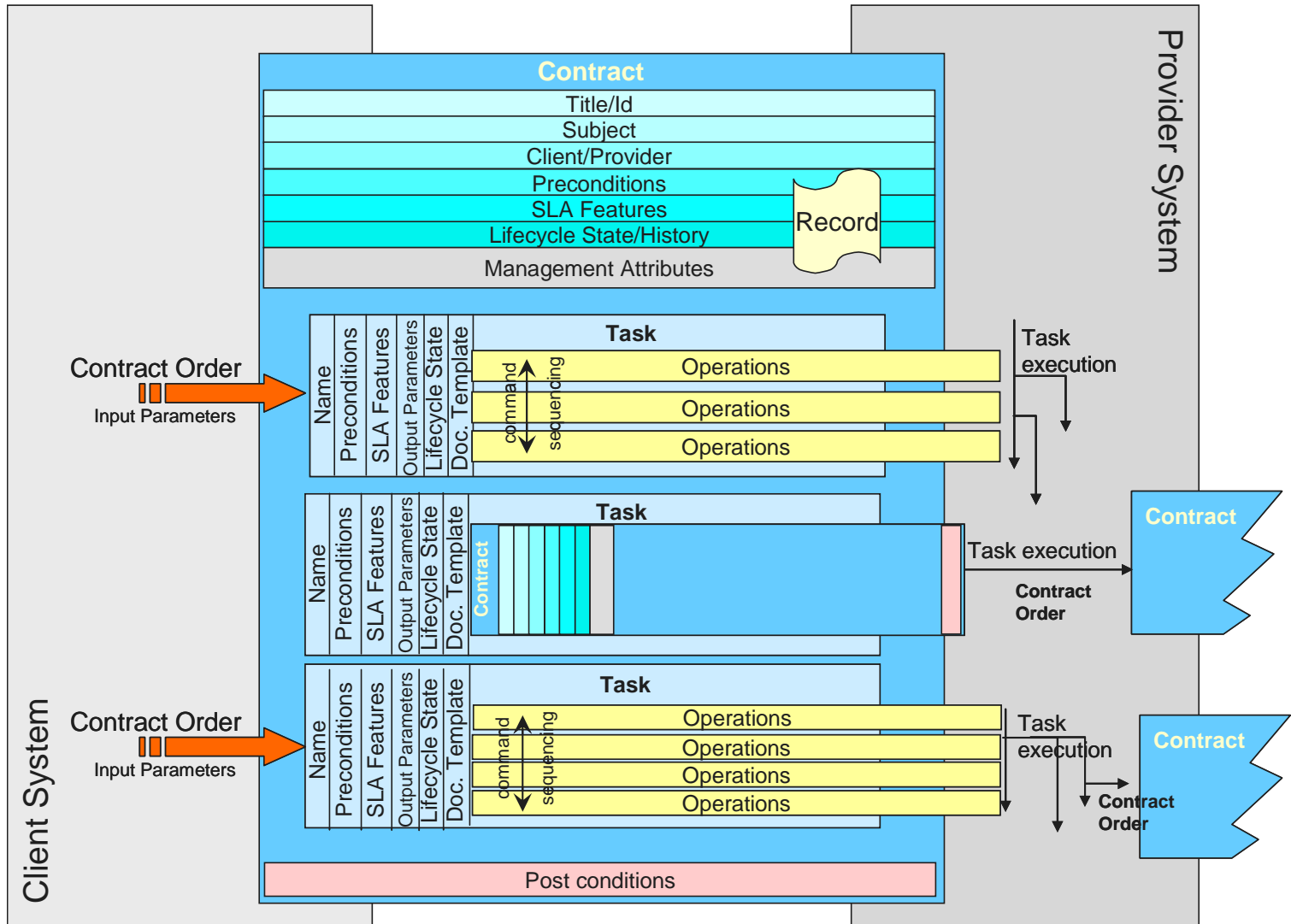
Contract Definition – GB942

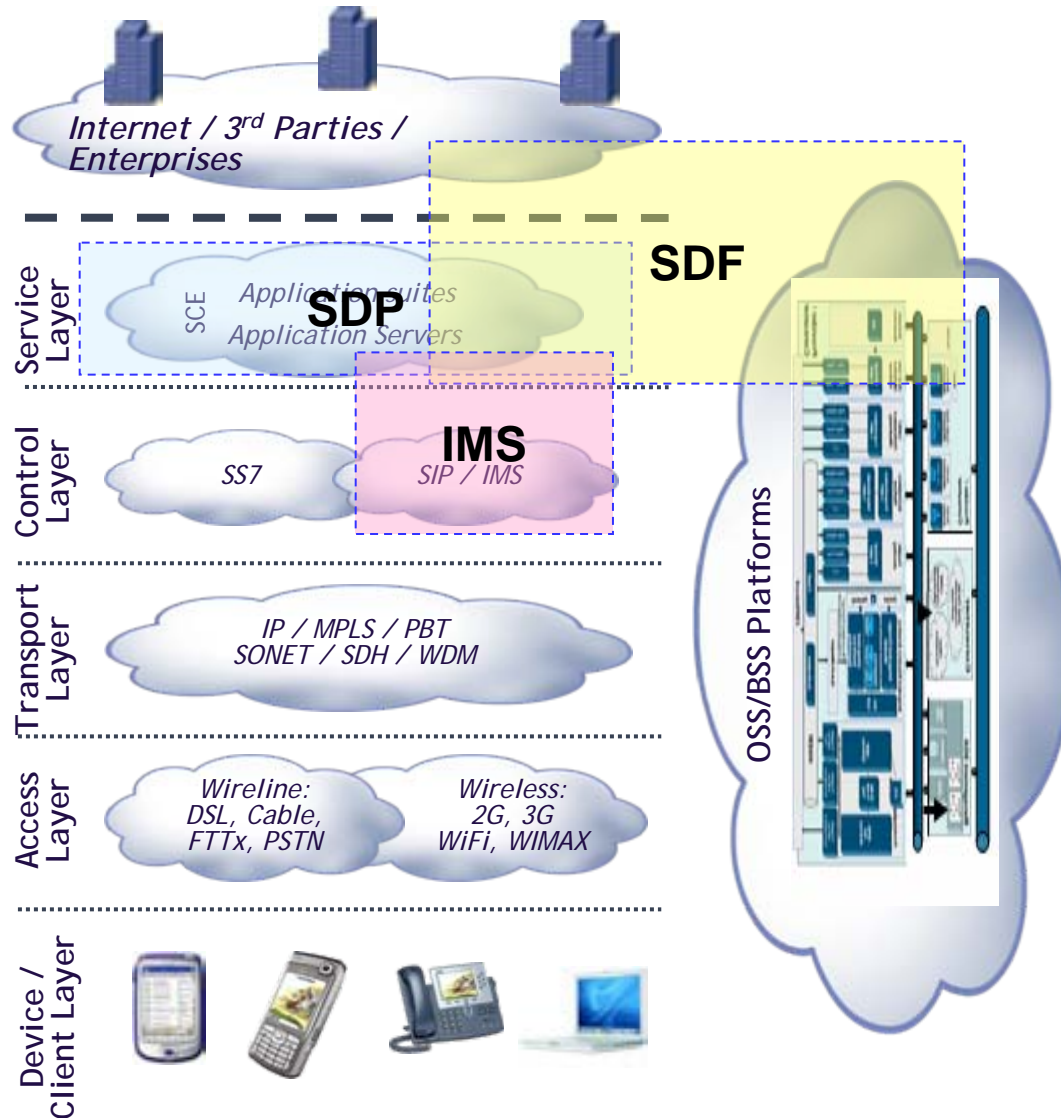- Contracts provide the missing "glue" by unifying NGOSS artifacts: eTOM, TAM, and SID

Contract Instance

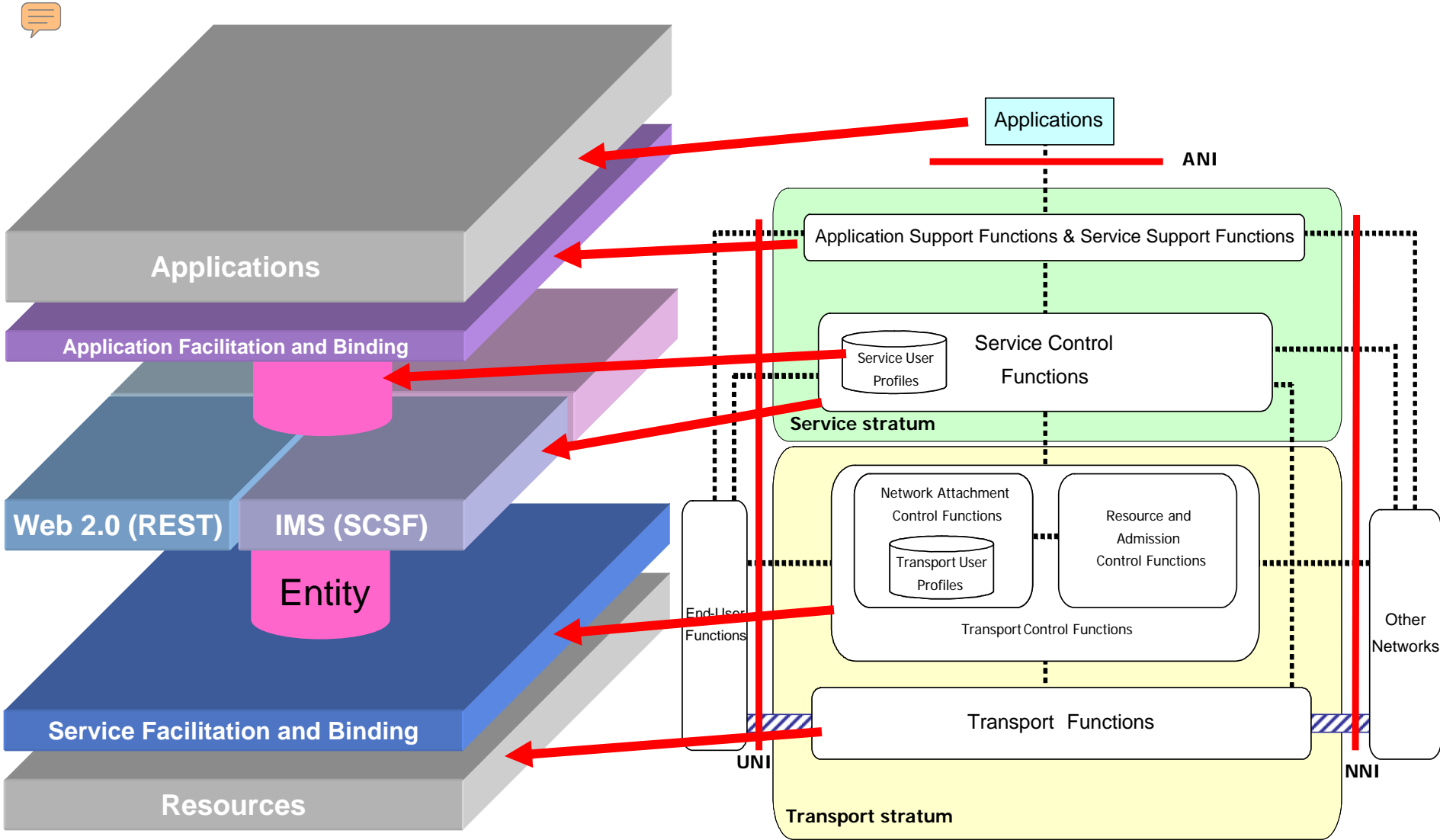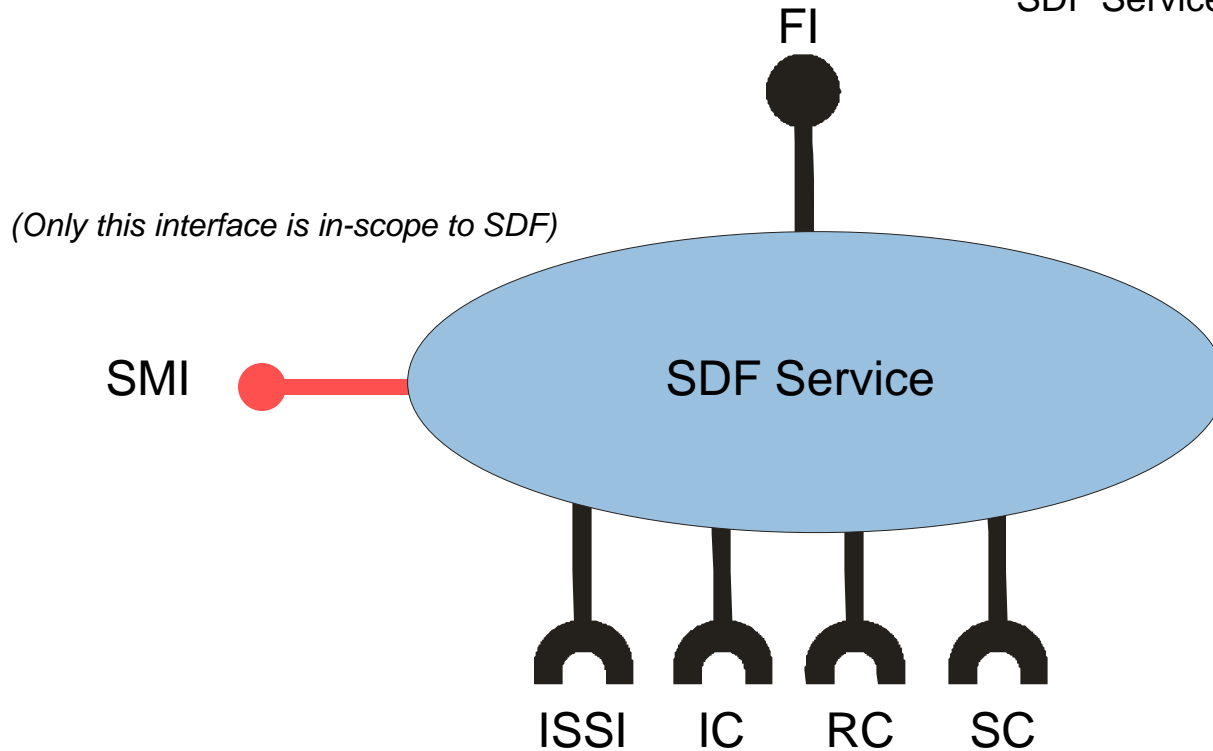# Service Delivery Framework

Source: TM Forum SDF (Service Delivery Framework): Program overview

Mapping IMS to the ExperiaSphere NGNSA Reference

FI

(Only this interface is in-scope to SDF)

SMI

SDF Service

ISSI   IC   RC   SC

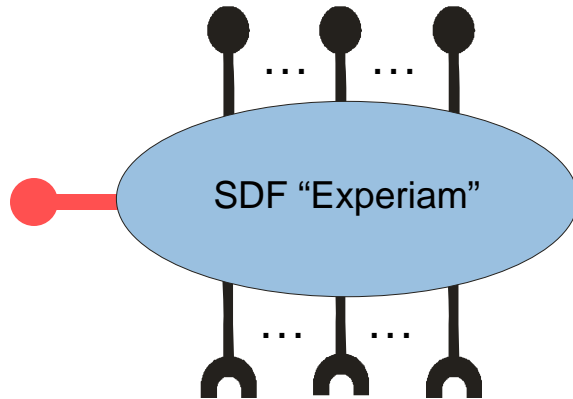**FI – Functional Interface, the service data and signaling connections**

SMI – Service Management Interface, the link to the management process

ISSI – Infrastructure Support Services Interface, the link to infrastructure services
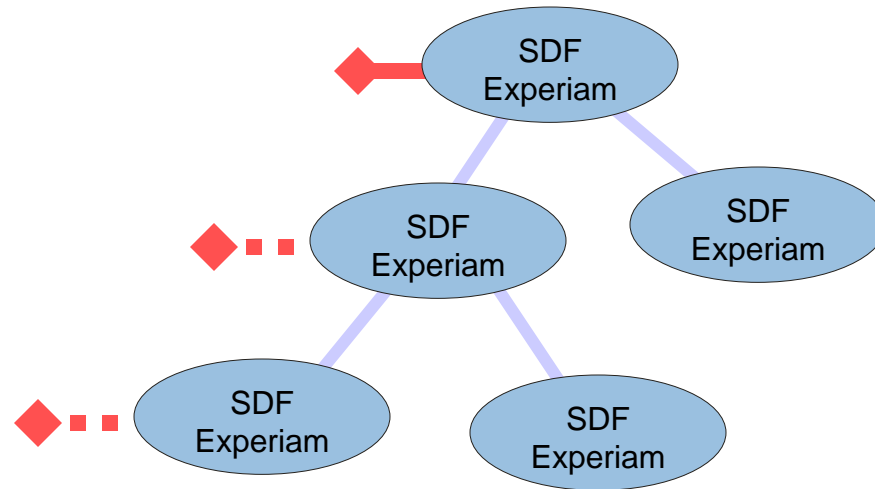
IC – Infrastructure Consumer, the infrastructure resources consumed by the service process

RC – Resource Consumer, the link to the service resources themselves

SC – SDF Services Consumer, a link to other SDF services
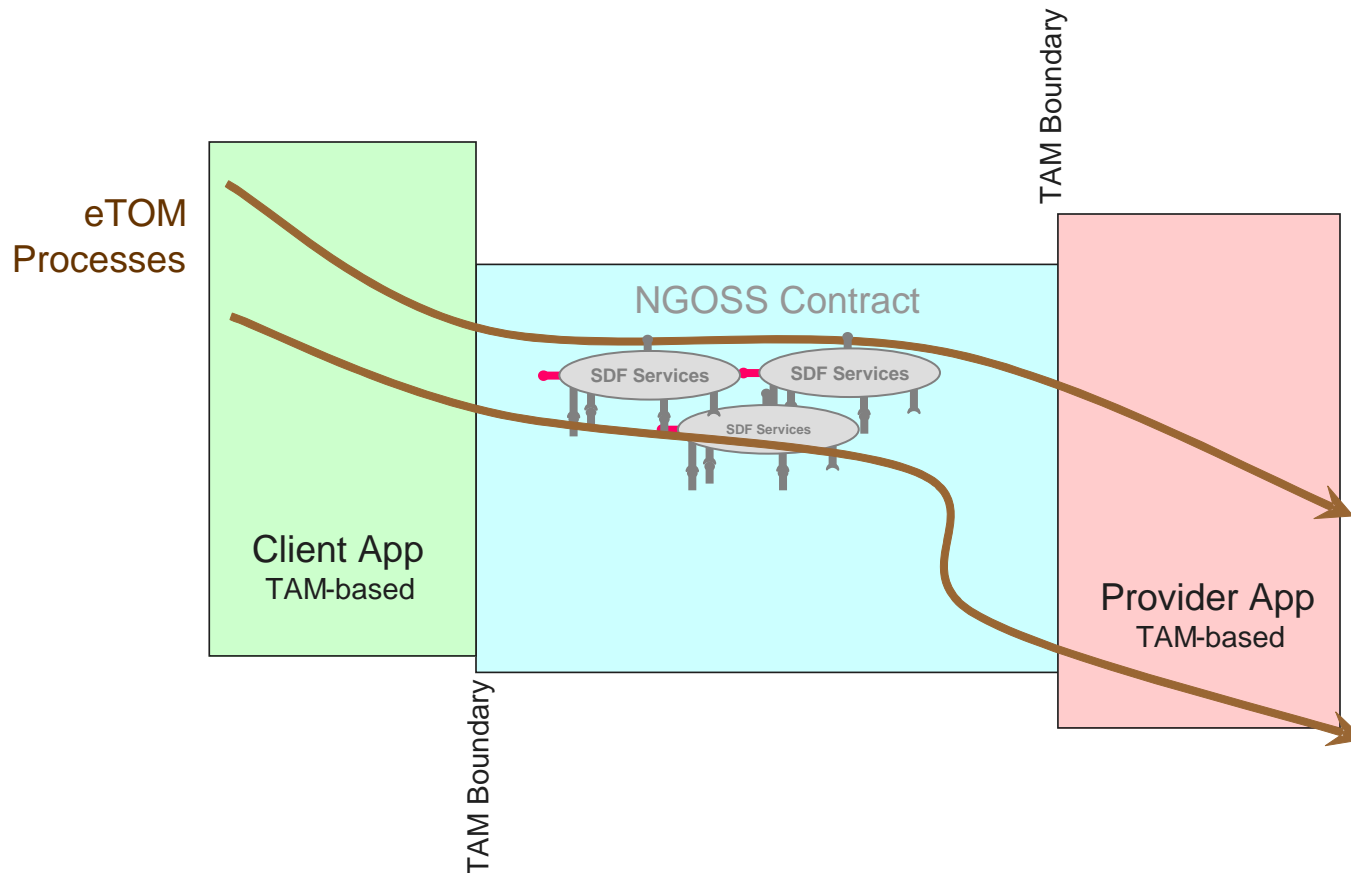
ExperiaSphere
Think Outside the Bit

SDF "Experiam"

An ExperiaSphere representation of an SDF Service would not provide any "Functional Interface" as these are provided only in the resource structure that is underneath. Instead it would provide a series of virtual plugs and sockets that represent the ability of Experiams to link with each other to form structures like the one below. Each of these structures could also support any number of external interfaces (red) that could be either plugs or sockets in a logical sense. In normal practice, each Experiam is responsible for the management of its subordinates; the external management system manages the top-level one, but it is perfectly possible to expose individual management capabilities for each member, providing the system takes responsibility to maintain proper state relationships among the members.
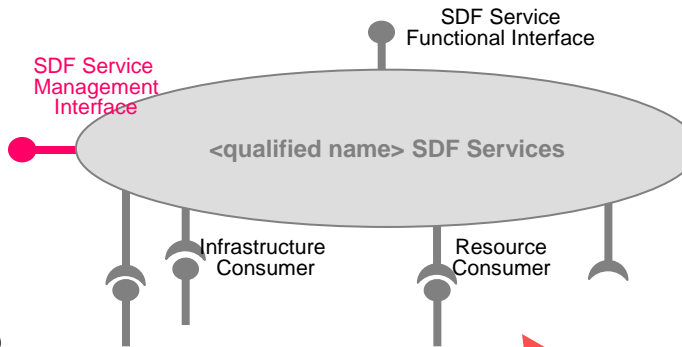
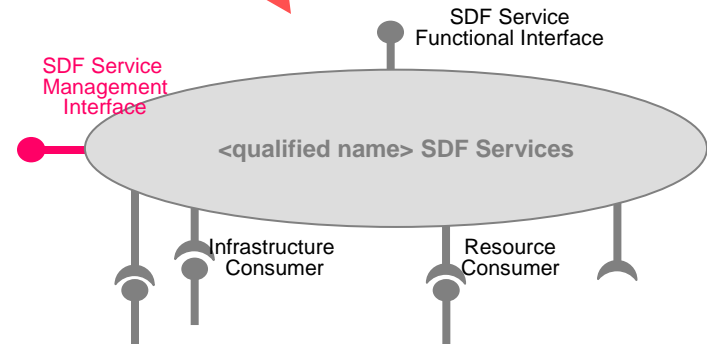# The Unification/Harmonization Model

eTOM Processes

TAM Boundary

NGOSS Contract

SDF Services

SDF Services

SDF Services

TAM Boundary

Client App
TAM-based

Provider App
TAM-based

The Question of Management Flow of Control

Does the SDF MSS manage each service independently, or…

SDF Service Functional Interface

SDF Service Management Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

…is there a "contract model" through which structured management of SDF compoents is exercised?

When SDF Services are composed into a higher-layer service structure, how is the coordination of roles managed at the high level?
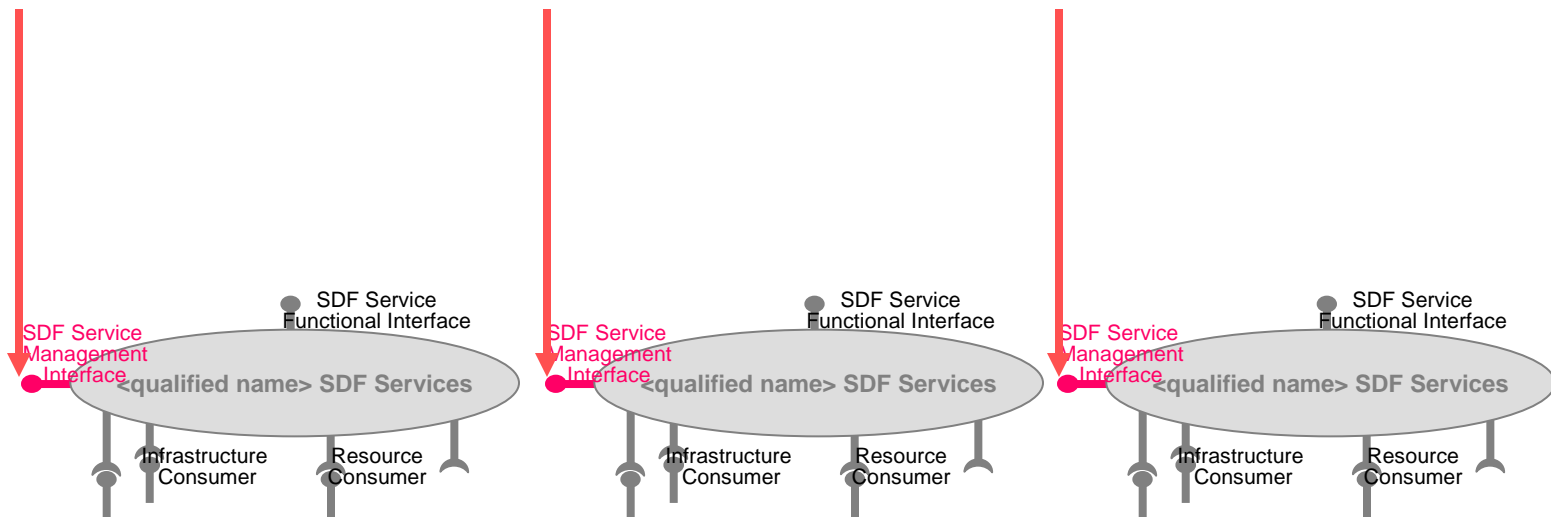
SDF Service Functional Interface

SDF Service Management Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

ExperiaSphere

Think Outside the Bit

A "Flat Model"

Management Services

SDF Service Functional Interface

SDF Service Management Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

SDF Service Functional Interface

SDF Service Management Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

SDF Service Functional Interface

SDF Service Management Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer
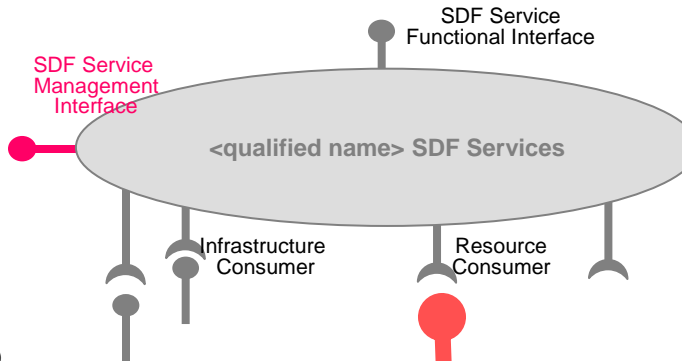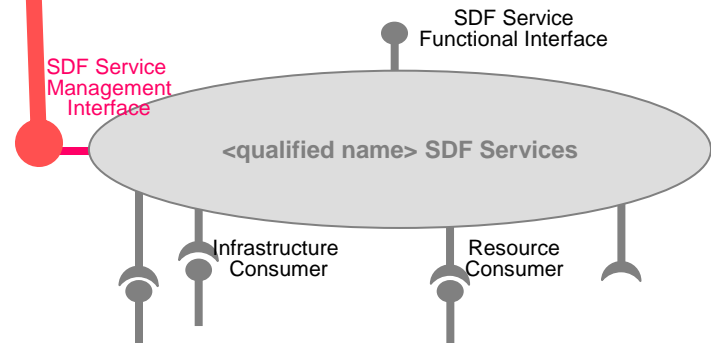
SDF Services as "Resources"

Does the structure of a higher-level SDF Service create a "SDF-as-a-resource" model?

SDF Service Management Interface

SDF Service Functional Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

In this model, a higher-level service "consumes a resource" that is a structure of SDF services.

When SDF Services are composed into a higher-layer service structure, how is the coordination of roles managed at the high level?

SDF Service Management Interface

SDF Service Functional Interface

<qualified name> SDF Services

Infrastructure Consumer

Resource Consumer

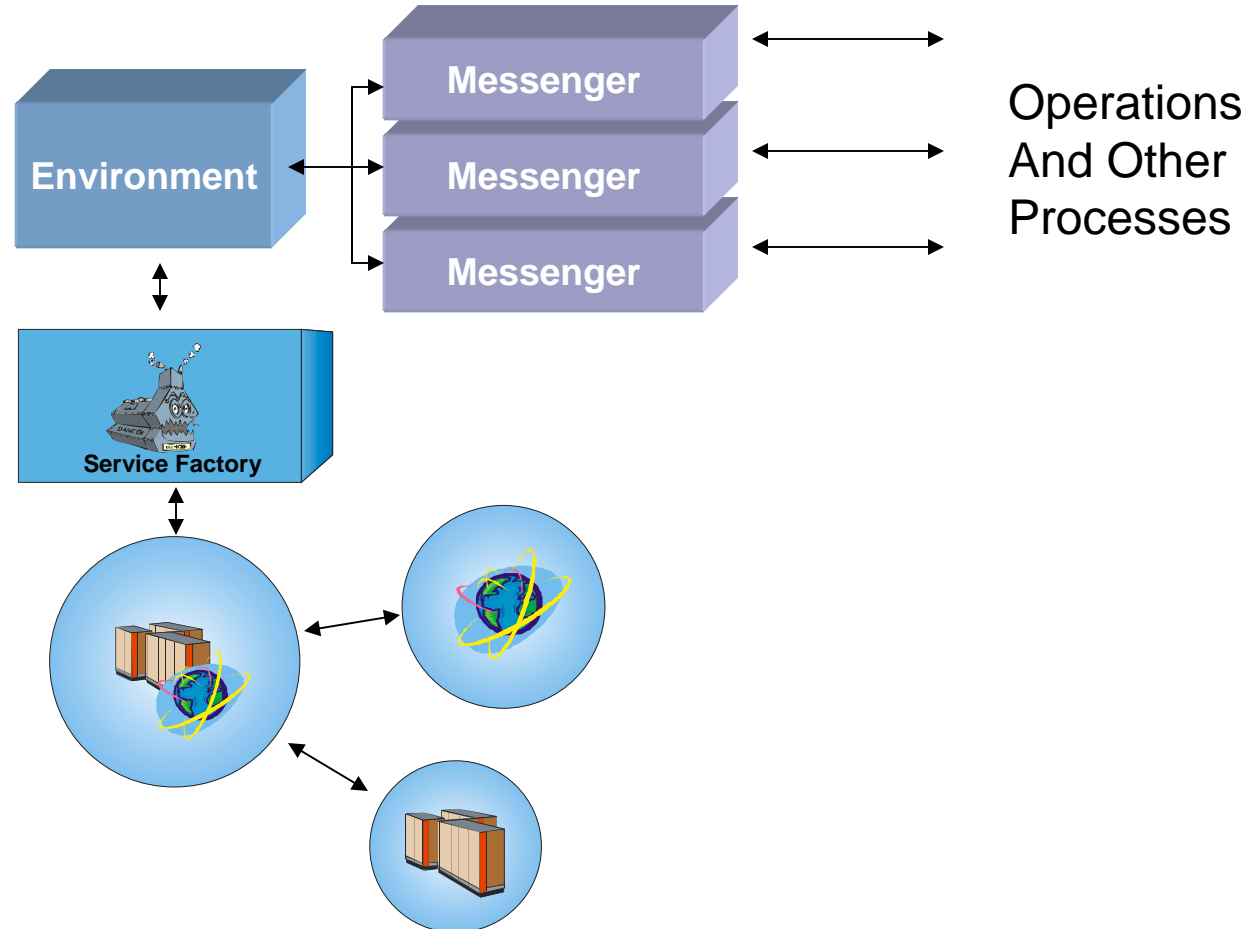ExperiaSphere
Think Outside the Bit

TMF Interfaces

- TMF defines a bunch of interfaces through "Implementation Agreements"

- It's likely there will be a specific interface for the SDF SMI

- There is a fairly generalized interface called the MultiTechnology Operations System Interface or MTOSI
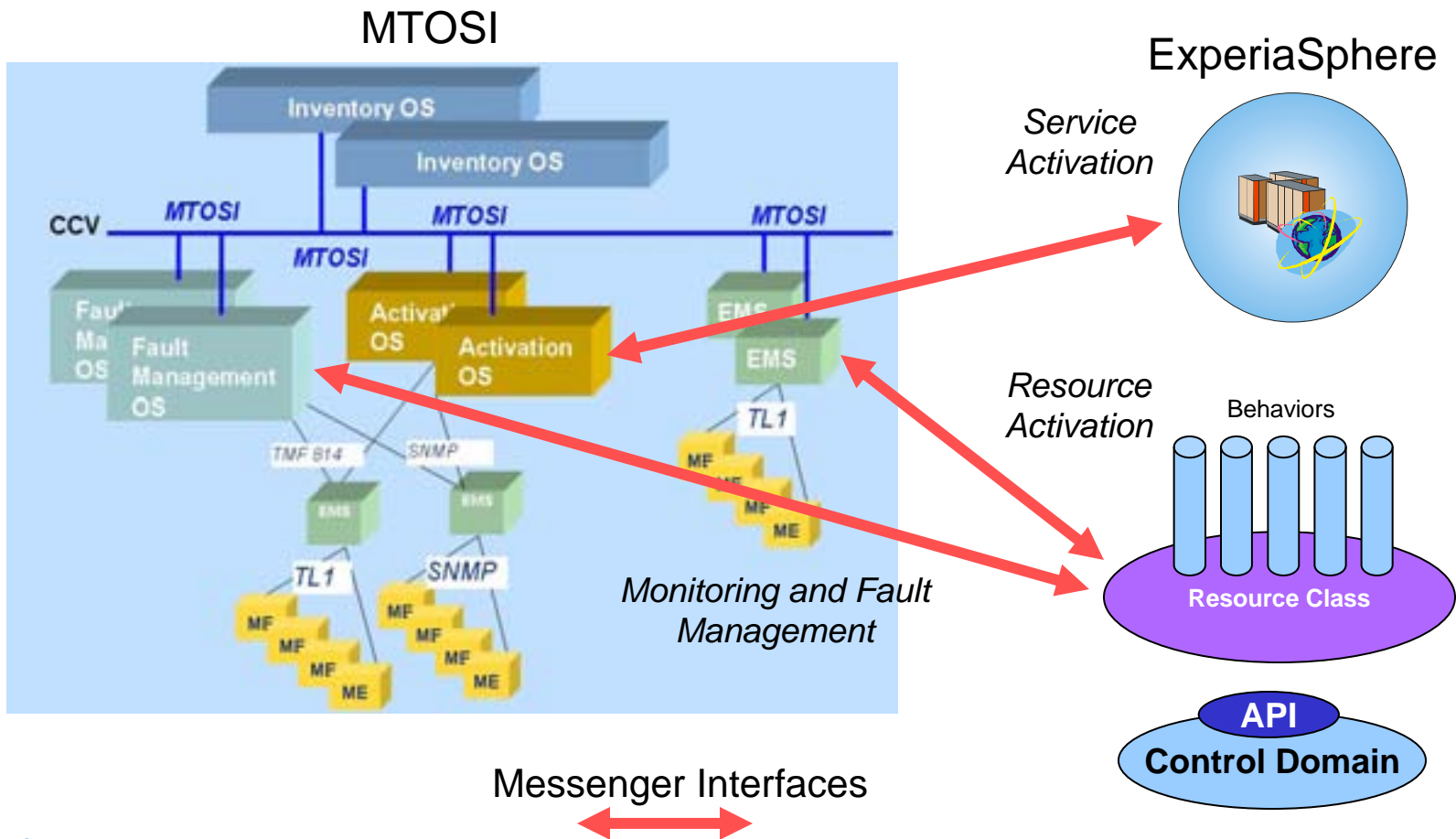
ExperiaSphere and External Interfaces

ExperiaSphere is built on Java applications that include one or more Service Factories. Each Factory has a Service Contract specimen that is available to be ordered, and an order will consist of dispatching an instance of that contract to the Factory. There, it is passed down to the subordinate factories that create each component of the service order. The service Order is a persistent artifact that connects the individual Factory contributions and also exposes and/or accesses any operations processes via Messengers. **A Service Factory can take work in any form and deliver it in any form with the proper messenger!**

Environment

Messenger

Messenger

Messenger

Operations And Other Processes

Service Factory

ExperiaSphere

Think Outside the Bit

An MTOSI Example

Summarizing ExperiaSphere and TMF

- We have tried to insure that TMF models could be executed with ExperiaSphere

- We've contributed ExperiaSphere concepts into TMF SDF and also talked to the NGOSS Contract people

- We believe that the Experiam model will work with the evolving TMF model