

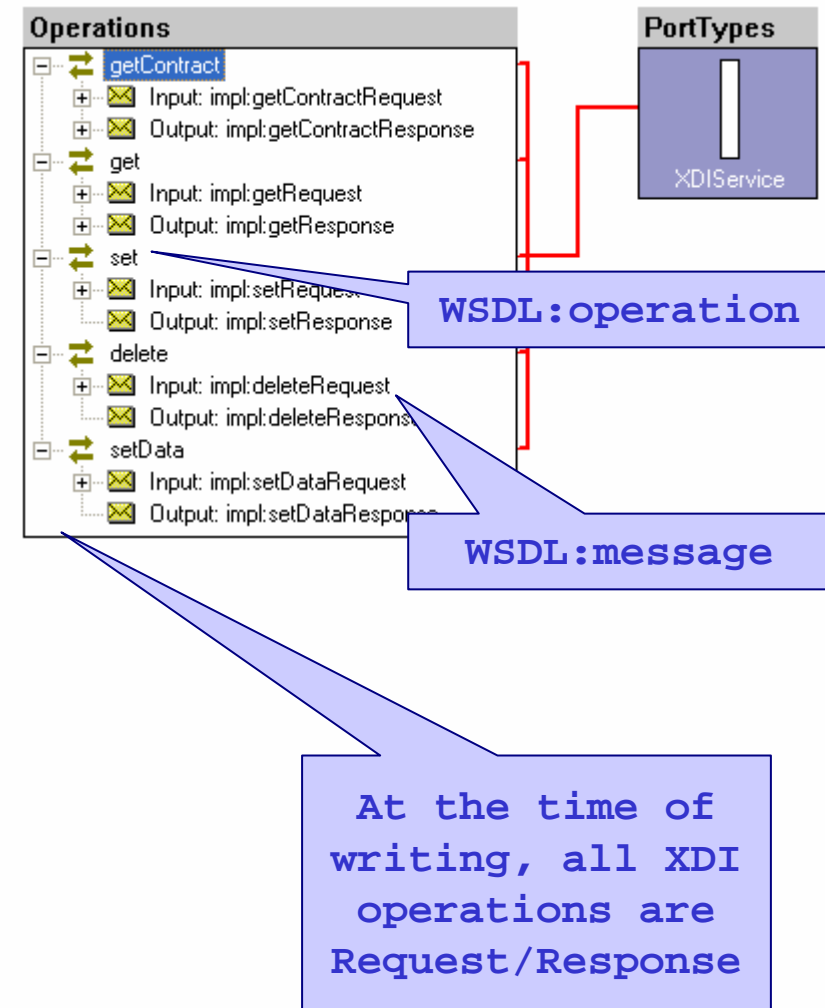


Introducing Notification in XDI

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What are *notifications*?

- XDI service is currently provided as a Web Service
- Its primitives (get, set, etc) are described in a WSDL instance
- WSDL defines four different operations' types
 - Def#1 input message is a message sent by a client to a server
 - Def#2 output message is a message sent by a server to a client
 - One-way (consists of an input message) $C \rightarrow S$
 - Request/Response (consists of an input message followed by an output message) $C \rightarrow S \rightarrow C$
 - Notification (consists on an output message) $S \rightarrow C$
 - Solicit/Response (consists on an output message followed by an input message) $S \rightarrow C \rightarrow S$
- Notifications are therefore operations which originate a message to be sent by a server to a subscribed client



- Source of Inspiration



XML Document Management (XDM) Specification

Approved Version 1.0 – 12 Jun 2006

- [XDM](#) is a recent Open Mobile Alliance standard, it *defines the common protocol for access and manipulation of XML documents by authorized principals*

Various OMA enablers such as, Presence, Push to Talk Over Cellular (PoC), Instant Messaging (IM), etc. need support for access to and manipulation of certain information [...] expressed as XML documents and stored in various document repositories in the network where such documents can be located, accessed and manipulated [...] by authorised principals

Basically

XDM =

IETF XML Configuration Access Protocol (XCAP)

+ an extension of IETF Session Initiation Protocol (SIP) - Specific Event Notification (RFC3265)

- IETF XCAP
 - A convention for describing elements and attributes of an XML document as a HTTP resource, i.e., accessible via an HTTP URI → **are XRIs!**
 - A technique for using HTTP GET, PUT and DELETE methods for various document manipulation operations (e.g., retrieving/adding/deleting/modify xml elements/attributes, etc.) → **are (similar to) XDI operations!**
 - Authorization policy rules for accessing and manipulating documents → **are (similar to) XDI link contracts!**

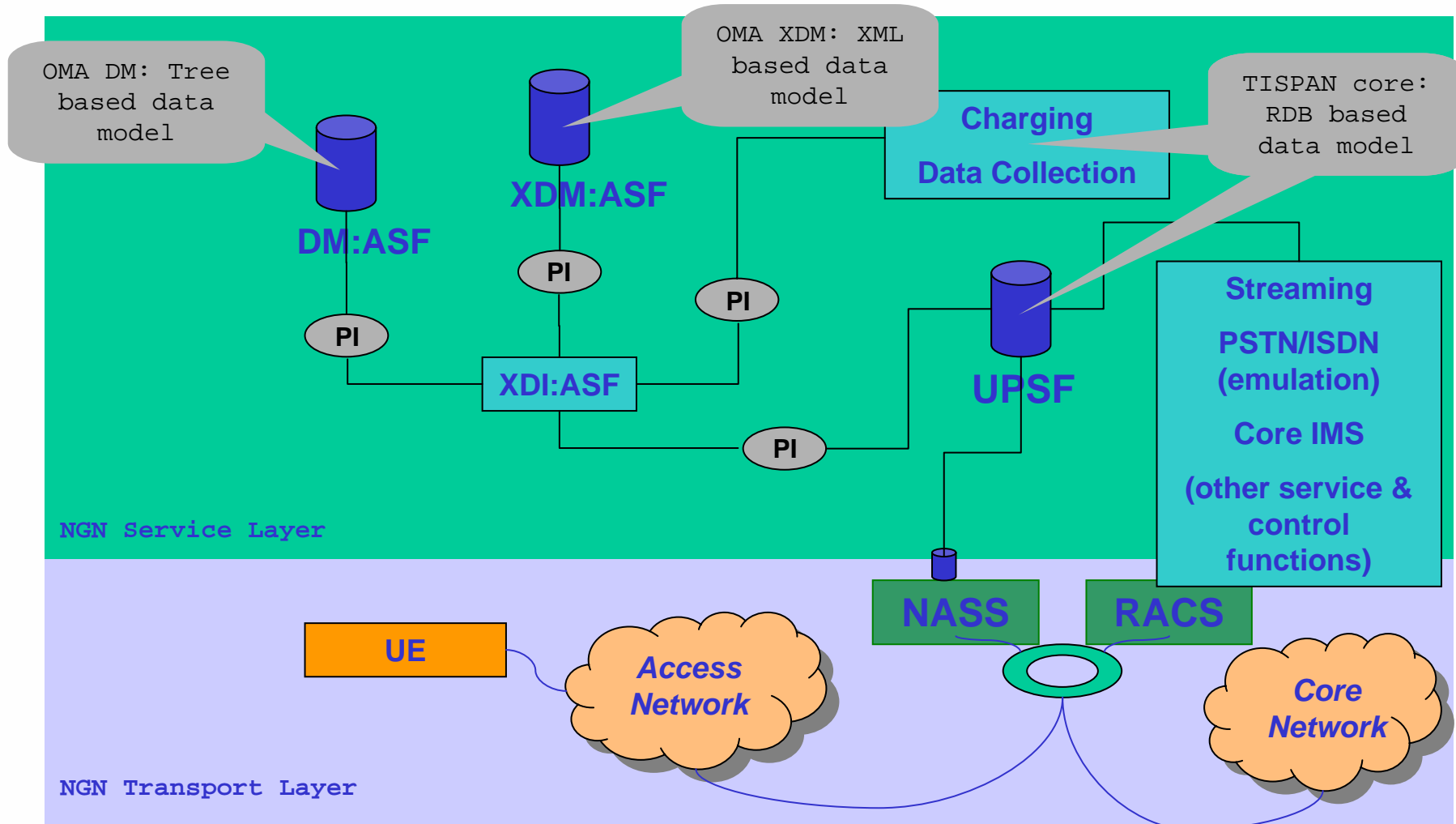
But the interesting thing is that

XDM specification *also defines a technique by which changes to such XML documents can be conveyed to an XCAP CLIENT. This reuses an IETF-defined SIP event package by which an XDM Client subscribes to changes to all documents that it owns*

- This is an [extension](#) of IETF Session Initiation Protocol (SIP) - Specific Event Notification ([RFC3265](#))
- It works as follow
 - The *client* (either an application server or the user equipment) specifies a pattern identifying the xml fragment inside an xml document to be accessed and sends a SUBSCRIBE request towards the SIP/IP Core
 - The client will receive a NOTIFY message from the XDM server keeping the updated information

- Compared to XRI/XDI, OMA XDM appears naïve...
 - can handle only XML documents
 - doesn't split into an abstract protocol and binding mechanisms: it just binds operations to concrete transport/signal protocols, like HTTP and SIP
 - **doesn't keep the concept of data-link between different documents enabling the so called data-web**
 - ...

- Medium-Long term target
→ **Next Generation Networks**
 - *Convergence* is the keyword...
 - Convergence of fixed/mobile network
 - **Convergence of WEB technologies and Telco services**
 - A great opportunity (and challenge) for XDI/XRI!
 - A great opportunity for people coming from computer science to put hands in hot telco topics ☺ and making their stuff smarter...
 - My vision in the following slide...



- How to implement notifications?
 - A new operation to add to the functional interface (WSDL definition)
 - Let it outside the functional interface, use some “standard” fired plugins
 - Binding to concrete protocols: proposals
 - SIP
 - RSS
 - SMTP

All of them offer the capability to generate notification to a client

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- Questions?

