



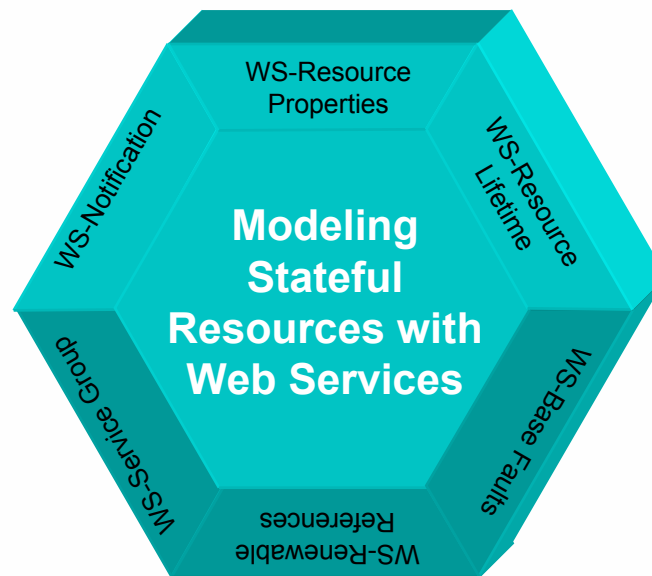
Bringing Grid & Web Services Together

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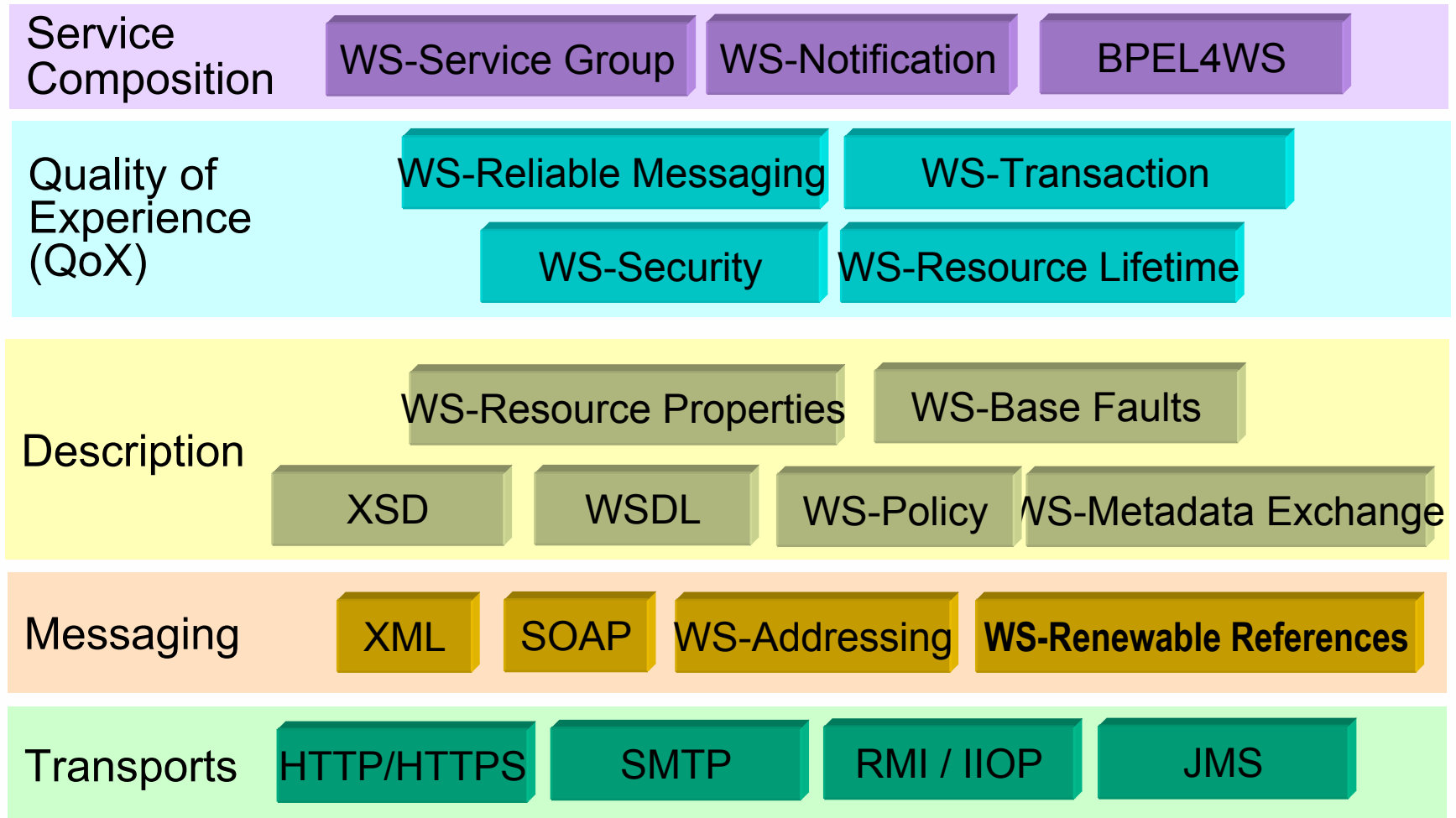
Dr. Daniel Sabbah
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IBM Software Group

What we are announcing today

- A family of Web services specification proposals
 - Introduces a design pattern to specify how to use Web services to access “stateful” components
 - Introduce message based publish-subscribe to Web services



How these proposals relates to other Web services standards:



The WS-Resource framework model

- **What is a WS-Resource**
 - **Examples of WS-Resources:**
 - Physical entities (e.g.. processor, communication link, disk drive) or Logical construct (e.g.. agreement, running task, subscription)
 - Real or virtual
 - Static (long-lived, pre-existing) or Dynamic (created and destroyed as needed)
 - Simple (one), or Compound (collection)
 - **Unique - Has a distinguishable identity and lifetime**
 - **Stateful - Maintains a specific state that can be materialized using XML**
 - **May be accessed through one or more Web Services**



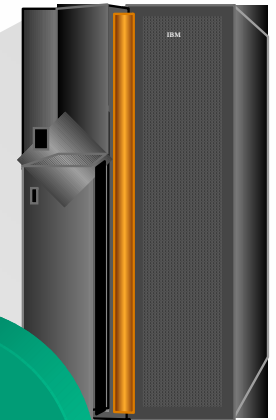
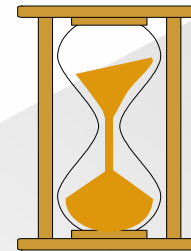
The WS-Resource framework model

■ WS-Resource Properties

- Resource state and metadata
“Projected” as an XML document
- Query and Set operations

■ WS-Resource LifeTime

- Explicit destruction or
“Soft state” time-to-live
- Provides for cleanup
of resource instances



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<ProcessorProperties>  
  <ProcID>5A34C1DE03</ProcID>  
  <ProcArchitecture>Power6.2</ProcArchitecture>  
  <ProcSpeedMIPS>400</ProcSpeed>  
  <ProcCacheMB>256<ProcCache>  
  <ProcRunning>1</ProcRunning>  
  
</ProcessorProperties>
```

WS-Notification

- **Characteristics of WS-Notification:**
 - **Web services integration of traditional enterprise publish/subscribe messaging patterns**
 - Composes with other Web services technologies
 - Facilitates integration between different messaging middleware environments
 - **Standardizes the role of Brokers, Publishers, Subscribers and Consumers**
 - **Provides two forms of publish/subscribe: direct publishing and brokered publishing**
 - **Standardizes Web service message exchanges for publishing, subscribing and notification delivery**
 - **Defines XML model of Topics and TopicSpaces to categorize and organize notification messages**

WS-Resource framework & WS-Notification

Scenario: Grid Resource Management & Scheduling

