UWS and UWS-PA

Report to GWS-WG,
IVOA Interop.,
Moscow, September 2006

What is UWS?

- "Universal Worker Service"
- A **pattern** for asynchronous services
- Has an IVOA spec (currently v0.2 WD)
  - Document not changed since Victoria interop.
- Application of pattern => IVOA service spec.
- Each such spec. can cover many science tasks
  - Hence "universal"
  - Specialization to task => job language.

UWS operations

- For each job:
  - createJob(instructions: JobDescriptionLanguage) : JobId
  - execute(job: JobId)
  - getResourceProperty(Job: jobId, property: String): ResourceProperty
  - getTerminationTime(job: JobId) *
  - setTerminationTime(job: JobId) *
  - destroy(job: jobId) *
- * = taken from WS Resource Framework (WSRF) standards

Application of UWS pattern

- Application defines types used in operations:
  - JobDescriptionLanguage
  - JobId
  - ResourceProperty
- Application defines a WSDL contract
- Application may add operations to UWS

What is UWS-PA?

- "UWS for Parameterized Applications"
- Applies UWS to jobs defined by lists of parameters
  - I.e. JobDescriptionLanguage is a list
  - Very general
  - Uses JobDescriptionLanguage from AstroGrid CEA
- Can be used for data-transformation or data query
  - Same WSDL contract; different job parameters
  - Contract specifies a "tool" document
  - "tool" contains zero or more named parameters

UWS-PA spec. and demo

- UWS-PA is a "strawman" proposal
- Therefore no formal spec yet
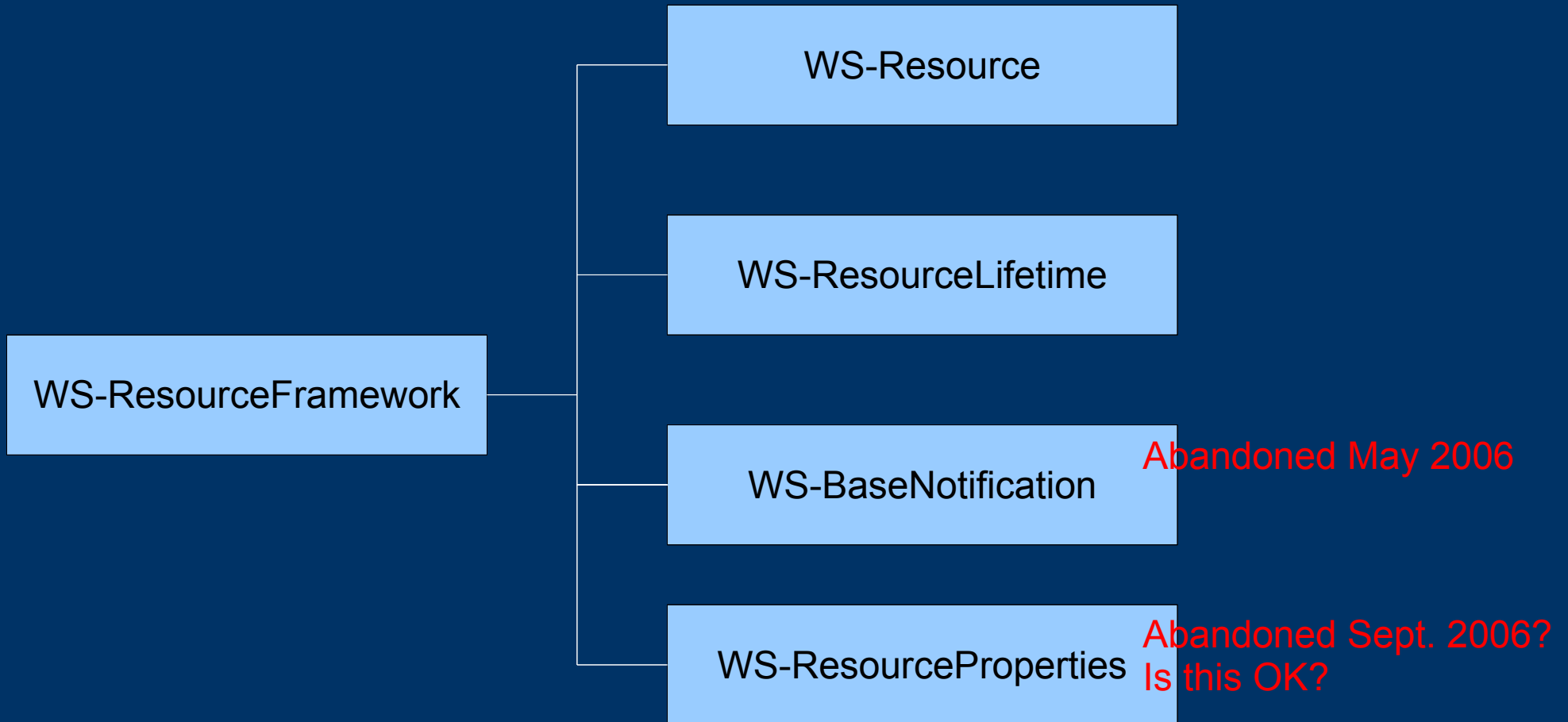- Defined by following demo

UWS-PA operations

- Following the pattern:
  - createJob(job: Tool): JobId
  - execute(job: JobId)
  - getTerminationTime(job: JobId)
  - setTerminationTime(job: JobId)
  - destroy(job: JobId)
- Deviating from pattern:
  - getJobState(job: JobId): JobState
  - getParameter(job: JobId, parameter: String): ParameterValue
- getJobState and getParameter have replaced getResourceProperty

Why the deviation?

- We want one WSDL contract for UWS-PA
- We want to get different named parameters for each job
- WS-RF requires all resource properties to be declared in WSDL!
- => don't use WS-RF for getting parameters
- => not so useful for getting job state

WS-RF usage in UWS

WS-ResourceFramework

- WS-Resource
- WS-ResourceLifetime
- WS-BaseNotification — Abandoned May 2006
- WS-ResourceProperties — Abandoned Sept. 2006? Is this OK?

Possible resolutions

- Accept deviation from WS-RF
  - Keep getParameter, getJobState
  - Abandon WS-ResourceProperties
- Conform to WS-RF
  - Restore getResourceProperty for job state
  - Abandon getParameter, getJobState
  - Add query-by-XPath operation for getting parameter values

WS-RF dead anyway?

- WS-RF is an OASIS standard
  - Backed by IBM, HP, SUN
- Now being "replaced" by W3C standard
  - Backed by MS, IBM
  - Not actually defined yet
  - => no support for WS-RF implementations?
  - Do we care about WS-RF any more?