Should WSRP Leverage WSN?

1. What is WSN?

2. How well does WSN match the semantics developed for WSRP Coordination?

3. Proposal

What is WSN?

- WSN is an OASIS TC (http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsn) working on the WS-Notification set of specifications

- Work began at the end of April 2004

- Concepts and initial spec derived from existing GridForum work (i.e. already reasonably vetted).

- Comparison: WSRP developed semantics at http://www.oasis-open.org/apps/org/workgroup/wsrp/wsrp-coord/download.php/7756/Discussed%20Eventing%20Semantics.doc

What is WSN?   Composable specs

➲ **Pub/Sub Whitepaper:** (see http://www.oasis-open.org/apps/org/workgroup/wsn/download.php/6661/WSNpubsub-1-0.pdf) Introduces terms and the Notification pattern used throughout the specs.

- ▪ Publisher: Entity generating notification information and supplying it to a NotificationProducer for distribution
- ▪ NotificationProducer: Entity managing subscriptions and distributing notifications
- ▪ NotificationConsumer: Recipient of notifications.

➲ **Topics:** (see http://www.oasis-open.org/committees/download.php/7467/WS-Topics-1.2-draft-01.doc) Notification topics are namespaced-qualified into TopicSpaces.

➲ **Base Notification:** (see http://www.oasis-open.org/committees/download.php/7373/wsn-WS-BaseNotification-1.2-draft-04.pdf) Defines Producer and Consumer roles. Supports generic notify() operation and NotificationConsumer-specific delivery operations.

➲ **Brokered Notification:** (see http://www.oasis-open.org/apps/org/workgroup/wsn/download.php/6601/WS-BrokeredNotification-1-0.pdf) Adds the NotificationBroker role, which acts as both NotificationConsumer and NotificationProducer.

WSRP/WSN semantics ... do they match?

➲ WSRP: Participants in a tightly controlled (tree-oriented) relationships.

- ■ WSN: No relationship among the parties assumed

➲ WSRP: Events normally occur as a result of user interaction (base of tree).

- ■ WSN: Cause behind notification considered out-of-band.

➲ WSRP: Transfer events in batch for efficiency

- ■ WSN: Generic notify() operation can transfer an array of notifications.

➲ WSRP: Consumer has full control over which portlets receive which events

- ■ WSN: Distribution controlled via existent subscriptions.

➲ WSRP: Piggy-back transfer of events on other operations whenever possible.

- ■ WSN: Notifications delivered asynchronously as they occur.

➲ WSRP: Event processing needs contextual data similar to pbia()

- ■ WSN: generic notify() just carries a notification, but with an open payload.
- ■ WSRP could specify a structure for the payload to contain the parameters normally passed to pbia().

WSRP/WSN semantics ... do they match?

➲ WSRP: Events generated described by QName and schema:
- WSN: Good match to Topics. NotificationProducers publish the available event topics using Resource Properties.

➲ WSRP: Events processed described by QName and schema:
- This is effectively a request for a subscription, but the WSRP Consumer controls usage/distribution.
- WSN: Outside realm of WSN, but should be dealt with in the same manner as Events generated.

➲ WSRP: Event names encouraged to be hierarchically organized using an XPath-like syntax:
- WSN: Topics use a similar syntax

➲ WSRP: Events described per portlet using arrays:
- WSN: TopicSpaces provide the equivalent in document style, but are restricted to one namespace per TopicSpace.

WSRP/WSN semantics … do they match?

- ➲ WSRP: Generic handleEvents():

  - ■ WSN: Generic notify() could take additional parameters as data items. Not a match relative to returning events generated while processing the supplied set. Could either encourage WSN to expand notify() or have a WSRP-specific delivery operation.

- ➲ WSRP: No subscription process

  - ■ WSN: BaseNotification requires explicit subscription.

  - ■ WSRP: Portlets indicate capabilities and Consumer chooses which events to pass to which portlets (including ones generated by itself).

Proposal:

1. Explore leveraging the Topics specification (e.g. make both publishedEvents and handledEvents arrays of TopicSpace documents rather than our own type).

   - Would make leveraging WSN for out-of-band events easier.

2. Explore WSN TC's openness to separating subscription factory from distribution semantics.

3. Explore usefulness of generic notify() operation. Could WSRP needs be satisfied with simple changes or should a WSRP-specific operation be defined?