

KanseiGenie:
GENI-fying and Federating
Autonomous Kansei Wireless Sensor Networks

Spiral 1 – Quarter 1 Report

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1. Major accomplishments

- We completed refactorization of the Kansei design.
- We made significant progress on the reimplementaion of the Web Service Layer (see Fig.1 below).

2. Milestones achieved

- [KANSEI: 1c Refactor Kansei researcher portal](#) (competed design portion)
- [KANSEI: 1d Refactor Kansei component and aggregate managers](#) (competed design portion)

3. Deliverables made

1. Documentation on the refactored Kansei. See: <http://sites.google.com/site/siefastgeni/documents-1/KanseiGENification.doc>
2. Milestones and detailed near-term roadmap. See: <http://sites.google.com/site/siefastgeni/roadmap>.
3. Catalog of Kansei resources/connectivity.

4. Description of work performed during last quarter

- The architecture of KanseiGenie, as refactored from Kansei, was designed to be as follows:

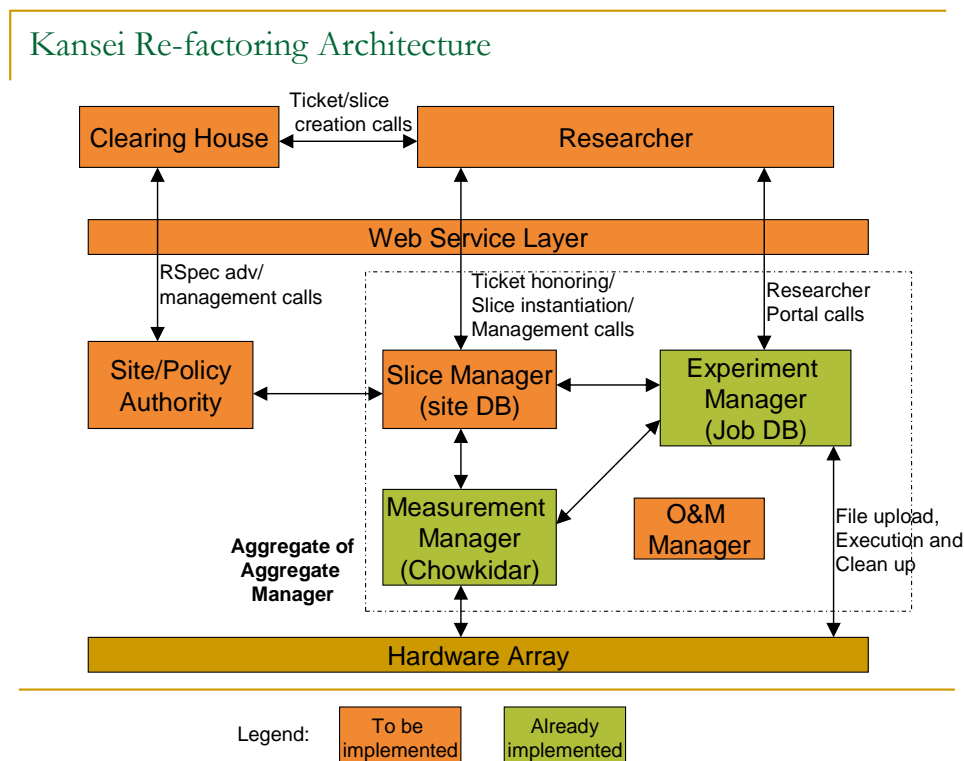


Fig.1 The four boxes in the dotted frame correspond to the four planes suggested by GENI

- We drafted the clearinghouse APIs: See: <http://sites.google.com/site/siefastgeni/documents-1/ws-contributions/KanseiGenie-CH-v0.1.doc>
- We completed part of the reimplementations of the Researcher Portal (the box labeled as Researcher in Fig. 1).
- For v1.0, we're presently reimplementing the Slice Manager (the control plane) and the Experiment Manager (the experiment plane).
- We spent a fair amount of effort studying the control frameworks, in particular evaluating the suitability of the ORCA framework and its present implementation, for our purposes.

5. Activities and findings

The following tasks are ongoing:

- J2EE prototyping.
- ORCA prototyping.
- Transformation of the current Kansei website to a researcher portal. This portal will permit web-based interactions, as well as provide program-based access via web services.
- First demo planned on Feb 28th.

We have identified the following risks as well as risk mitigation approaches.

- Risk: Inter-operability issues between heterogeneous GENI components.
 - We assume that most heterogeneous GENI components will communicate through web services and different implementations of web services would not create inter-operability issues later on.

Mitigation: Use of the established J2EE platform as the KanseiGenie implementation framework.

- Risk: Uncertainty in RSpec (Our first draft of RSpec is at: <http://sites.google.com/site/siefastgeni/documents-1/Kansei-RSpec.doc>)
 - This is a critical risk since a defined RSpec is essential for our future development and the RSpec definition is to a limited extent outside our control, as it is influenced by the Clearinghouse implementation groups.

Mitigation: Close engagement with Clearinghouse implementation groups.

- Risk: Uncertain date of delivery of ORCA's clearinghouse.

Mitigation:

- Begin early prototyping with ORCA
- Implement a skeleton clearinghouse for iterative development and testing without ORCA.
- Close engagement with other ORCA implementers, such as RENCI.

6. Project participants

Investigators:

[Anish Arora](#)

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[Hongwei Zhang](#)

[Vipul Gupta](#)

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Staff:

[Mukundan Sridharan](#)

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7. Publications (individual and organizational)

8. Outreach activities

9. Collaborations

10. Other Contributions