eGee

Enabling Grids for E-sciencE

On the evaluation of platforms for remote instrumentation on the Grid

Constantinos (Costas) Kotsokalis
Greek Research and Technology Network (GRNET)

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RINGrid

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Information Society and Media

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- **RINGrid WP6 work**
  - WP just started
  - About this presentation

- **Presentation contents**
  - Current available solutions
  - Gaps
  - Strategic goals
  - Methodology
  - Tangible results

- **Solutions for Remote Instrumentation on the Grid**
  - Mostly presented in "RINGrid: Evaluation of Remote Instrumentation Infrastructures" by Martin Polak

- **GRIDCC**
  - EU project, finished on 31/08/07

- **CIMA**
  - US effort, ongoing

- **VLAB**
  - Polish national project, ongoing

- **UCRAV**
  - Developed in Chile, in production

- **…**

- **Design: Limited use cases**
  - Instrument types and scale
  - Domain-specific parameters in design time
  - Reliability (technical)
    - E.g. short-term vs long-term experiments
- **Infrastructure: Interactivity**
  - The networking factor
- **Social: Reliability**
  - The instrument calibration example
- **…but are these the only ones? Do we really know what scientists want from Remote Instrumentation Infrastructures (RIIs)?**

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- **Verify whether current RIIs are sufficient for scientists and cover their requirements**

- **Identify most or all relevant gaps and problems**

- **Come up with useful features they may not expect**
  - E.g. workflow management for complete experiments, special visualisation capabilities, etc

- **Design a typical use case (the least common denominator)**

- **Design a conceptual model (architecture) for generic RIIs**

- **Provide recommendations and best practices**

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- **First questionnaire (preparation)**
  - Let's not constrain scientists
  - Have them explain steps of their daily experiments
  - Then possibly ask them what they would expect if suddenly the equipment was taken away
    - Expected reply: No difference
    - Maybe we can decide on what functionality is not negotiable though
- **Based on the questionnaire & use cases, decipher technical requirements**
- **Prepare a testbed**
  - Ability to make small or significant testbed implementation changes
  - See how this affects experiments

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- **Second questionnaire (experimentation)**
  - Should be completely user-oriented (domain-specific)
    - Issue: How to make it generic enough for everyone? (probably w/ draft typical use case)
- **Keep track of:**
  - Show-stoppers
  - Annoyances
  - Pleasant surprises
  - Exact time of experimentation
    - …to match w/ network-related issues
  - Overall comments

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- **Experimentation process**
  - Gather statistical information on user set
    - Age, English language fluency, IT competency, others
  - Training
    - Reference material on paper
    - Course on using the platform
  - Task execution & submission of completed questionnaires
- **Evaluation**
  - How many / which tasks could not be completed?
  - How many / which tasks were completed incorrectly?
  - What was the level of overall user satisfaction?
  - What were the major changes for users, in relation to local instrumentation?
  - …

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- **Experiment scenarios ==> Normative description of Remote Instrumentation experiment workflow ("typical use case")**

- **Conceptual design ("architecture") of RIIs**
  - Will build on current best practices
  - Emphasis on the network and user interfaces

- **Effort to touch on authorisation and policy issues**
  - What would instrument providers never accept to provide?
  - What kind of functionality would instrument users never accept to give away?

- **Results to serve as guidelines for the design of future infrastructures**
  - RISGE-RG

Thank you!

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ckotso@admin.grnet.gr

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