Space Computing with Group Key Agreement (LOKI)

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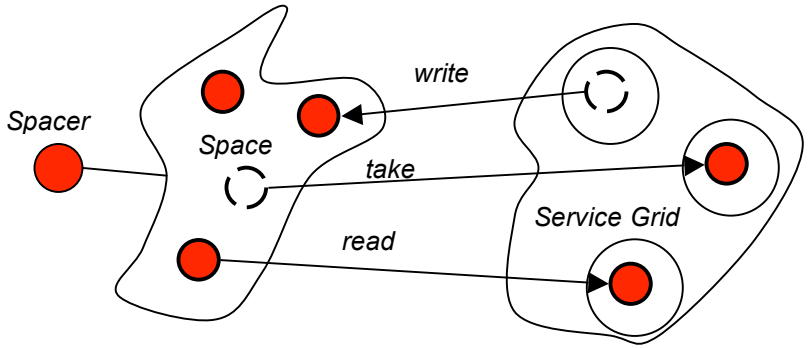
Problem:

- Shared spaces are inherently public
- Members in space computing can come and go (ad hoc)
- Space service broker doesn't explicitly know group members (workers)

Conclusion:

Secure Space Communication that can be initiated by a space service broker with management of a group of ad hoc services is needed.



*** red coloring designates group ***

Objective:

A group key agreement framework (LOKI) for space computing environments (LOKI – Location independent group Key Interactive management)

Approach:

- Literature Review
  - Group Key Agreement
  - Space Computing
- Analysis of space group management
- LOKI requirements and architecture
- Develop LOKI methodology
- LOKI design
- LOKI implementation
- Verification and validation of LOKI

Schedule

Literature Review	August 2007
Analysis	September 2007
LOKI requirements and architecture	October 2007
Develop LOKI methodology	November 2007
LOKI design	December 2007
LOKI implementation	January 2007
Verification and validation of LOKI	February 2007
Thesis Defense	March 2007

Benefits:

- Secure ad hoc space group management
- Secure space exertion oriented programming model
- Simplified management of group keys
- Secure communication between inherently public object space
- Friendly and intuitive user agent attached to space service broker
- Friendly and intuitive user agent for space-oriented grid computing