



# The SEEDS Standards Process Context

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## Standards Process Group Context

- SEEDS is
  - "Strategic Evolution of ESE Data Systems"
  - An "evolution accelerator"
  - A process for "directed evolution"



## Evolution From:

- As-is systems & management are of two kinds:
  - 1. Management to strict requirements baseline with general cross-cutting services provided by a large project responsive to prioritized requirements derived from a wide range of customers. (economy of scale)
  - 2. Management to flexibly-traded requirements with tailored, high value services provided by a small project responsive to specific community of defined costumers. (economy of purpose)
- Few bridges between the two approaches.
- Neither provides flexibility to support novel activities outside a particular project's given scope.



## Evolution Toward:

- Responsiveness to defined communities, services to broad community.
- Cross-cutting basic services that do not require central management.
- Ability to add new data system components, independently developed and independently managed without unduly perturbing existing systems.



## The Strategy

- Working groups bring community expertise to bear in practical application.
- ESE management accepts recommendations with demonstrated benefit.
  - Apply strictly to future procurement/development.
  - Apply loosely to systems in maintenance.
- Data systems developers manage independent systems, and provide standard interfaces.
- Excellence in data systems is partly judged by how well the systems incorporate accepted recommendations.



# Standards Process Group Strategy

- Adopt standards at the interfaces, appropriate to given science and drawn from successful practice.
- i.e. “a strategy to adopt standards that work”.
  - Adoption, not development.
  - Demonstrated implementation feasibility.
  - Demonstrated operational benefit.
  - Endorsement by “community of practice”.
- Consequence of standard
  - Future ESE data systems component proposals will be judged partly on how well they use appropriate ESE standards or else justify why departure from standard is necessary.



# Process Results

- The proposed process will result in the following beneficial characteristics:
  - Credibility - "peer" and "stakeholder" review of proposed standards will establish trust that standards are sound.
  - Transparency - within the ESE and allied communities, the progress of standards decisions will be evident
  - Workability - implementation examples and evidence of operational success will encourage adoption of standards that are known to work
  - Timeliness - standards adoption will keep up with technological innovation and fit into the schedule needs of missions.
  - Relevance - standards will be responsive to ESE mission, science and data systems requirements.



# Impact to Data Systems

- The adoption of interoperability standards will benefit the future evolution of ESE data systems:
  - Lower Cost - Adoption of standards results in lower costs for data system maintenance and replacement cycles.
  - Lower Risk - Adoption of proven standards assures that ESE data systems continue to be effective.
  - Greater Flexibility - Standards establish interoperability among ESE data systems analogous to “plug-and-play”.
  - Greater Innovation - Standards for data systems mean that ESE activities can pursue science and application innovation.



## SPG Goals for This Year

- Identify potential areas to standardize.
- Identify standards that will have practical impact and can likely be approved in a relatively short time.
- Identify communities who will use the process to promote their community standards for wider use and will implement the results.



Other Slides



## Future Data Systems Features

- Measurement based rather than mission or instrument based.
- Selection and management will emphasize flexibility and accountability over centralization.
- More distributed geographically, functionally and managerially.
- Diversity in implementation will be encouraged with coordination at the interfaces.



## SEEDS Working Group Contribution to Strategy

- Adopt standards at the interfaces, appropriate to given science and drawn from successful practice.
- Facilitate “clone and own” reuse of systems and components and collaborative “open source” development and maintenance.
- Accelerate technology infusion while reducing risk of adoption of demonstrated technologies.
- Define metrics that reflect both effectiveness in serving core constituency and participation in cross-cutting elements



## Impact accorded by status

- Submitted - No particular standing.
- Proposed - The SPG has affirmed that the proposed standard is applicable to ESE data systems
- Draft - Working implementations of the standard have been demonstrated in systems applicable to the ESE
  - ESE funded data systems activities should consider use of this standard where applicable.
- ESE - Significant operational experience has demonstrated value in ESE systems.
  - Where applicable, ESE funded data systems activities should use this standard or else justify why not.
  - Use of this standard may be a requirement for future data systems awards.



# Characteristics of Process

- The process relies on the dynamism inherent in technology development.
  - In areas where there are competing standards and without demonstrated operational benefit, standards may remain in, and be useable as "draft".
  - Even when the technology is proven (i.e. has gained "ESE standard" status), there is explicit understanding that the use of a given standard by a particular funded activity may not be appropriate.
- The process relies on community experience and advocacy.
  - Standards will grow out of practices rather than to be developed by expert committee and imposed.
- The process is advisory.
  - The decisions of the SPG are recommendations.
  - Advancement of a standard is an ESE management decision.



## Contacts

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