EPOS for Coordination of Asynchronous Sensor Webs

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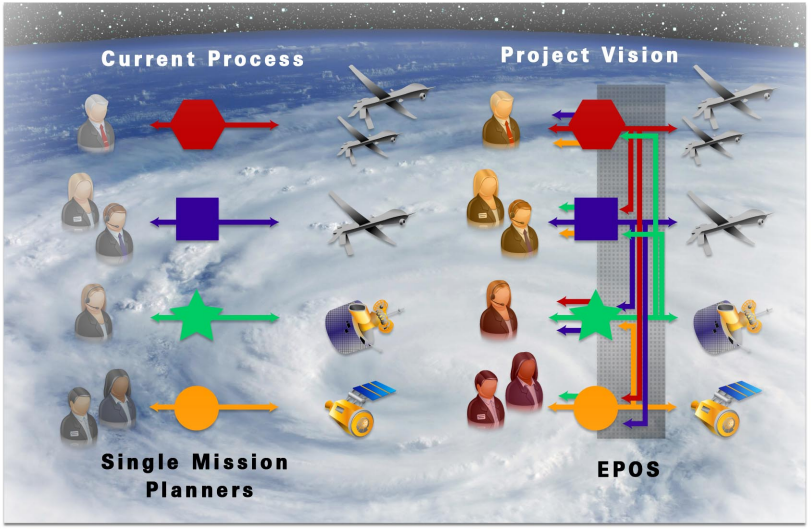
Objective

- Develop, integrate, and deploy software-based tools to coordinate asynchronous, distributed missions and to optimize observation planning spanning simultaneous observations across multiple sensor systems in order to improve science return from Earth observing systems
- Develop and infuse situation awareness, situation assessment, planning and scheduling technologies for the coordination of independently managed missions into the Draper Earth Phenomena Observation System (EPOS)
- Infuse EPOS into NASA Earth science missions including HS3 and EO-1
- Demonstrate the resulting integrated "system of systems" targeting disaster management



Approach

- Develop a baseline concept of operations (ConOps) for the integrated system
- Update and modify EPOS:
  - Develop mathematical models of the systems, decisions, benefits/values and constraints for the target missions
  - Develop optimized planning and execution tools to support coordination of sensor systems on air and space platforms
- Conduct a series of increasingly integrated operational demonstrations with HS3, ATTREX, and EO-1 to maximize overall science value

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Key Milestones

• Baseline ConOps developed	11/12
• EPOS baseline modifications complete	06/13
• EPOS technology demonstration (baseline ConOps)	09/13
• EPOS enhanced system modifications complete	03/14
• EPOS technology demonstration (enhanced ConOps)	04/14
• Initial EPOS technology mission demonstration	07/14
• HS3 mission support demonstration	09/14
• Final EPOS technology mission demonstration	04/15

$TRL_{in} = 3$ $TRL_{current} = 4$