# Automated Event Service (AES):
Efficient and Flexible Searching for Earth Science Phenomena
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Objective

Develop an Automated Event Service system that:

- Methodically mines custom-defined events (e.g., tornadoes) in the reanalysis data sets of global atmospheric models.
- Enables researchers to specify their custom, numeric event criteria using a user-friendly web interface to search the reanalysis data sets.
- Supports Event Specification Language (ESL) for more flexibility and versatility.
- Contains a social component that enables the dynamic formation of collaboration groups for researchers to cooperate on event definitions of common interest.
- Provides rapid results via high performance computing and advanced search technologies.
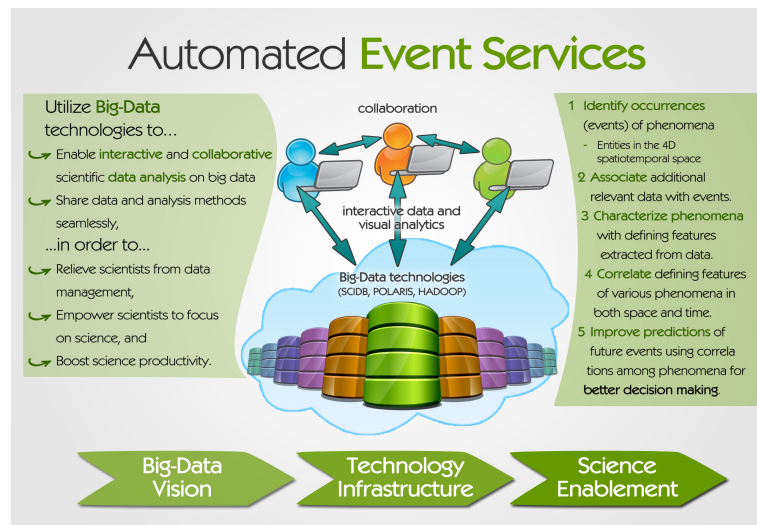
Overview of AES

Accomplishments

- Demonstrated ability to identify events in MERRA data using user-defined criteria within SciDB. Use case demonstrated include;
  - Blizzard use case
  - Somali Jet stream use case
- Demonstrated ability to characterize events and compute event statistics
- Demonstrated web services layer that could be used to embed AES in other systems
- Demonstrated ability to link AES events with Earth Observing System (EOS) Clearing House (ECHO) searches for relevant remote sensing data

Co-Is/Partners:

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TRL_{in} = 2 TRL_{out} = 5

Earth Science Technology Office