

Event Log Description

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A **digital event log** is a cruise coordination mechanism that provides a central location for recording time and position (latitude and longitude) labeled with a unique number for individual events occurring during a research study. The log ensures that the loosely coordinated activities undertaken during a cruise are comparable in terms of time and location. It represents an authoritative reference file in agreed upon formats, linking across measurements and groups in a manner consistent with the requirements of a centralized repository.

Research cruise programs with multiple groups of investigators require data coordination, integration and interoperability in order to have the observations managed collectively after the study in a single information system. **Dataset coordination** assures that agreed upon name and format conventions and procedures are consistent between groups and datasets. This is generally achieved by including time, date and position (latitude and longitude) information with each record and/or file. **Data integration** is improved when varied datasets can be brought together with these unifying links; for example, different observations of one sample volume (temperature, salinity, fluorescence) will be recognized later as all measuring the same volume, such as the sample taken during event#37.

Data interoperability involves more than the more straightforward coordination and integration. It includes shared infrastructures and standards that support defined relations between data that exists in an array of independent formats. The goal of interoperability is the presentation of the range of cruise dataset types, from SST satellite image collections to zooplankton counts, in a way that facilitates comparison and presentation?. In order to achieve data interoperability electronically, the data sampling must be managed and datasets defined through early coordination and integration processes.

The role of a digital event log is to accomplish data integration by establishing fixed relations via an event log number with each event number linked to a universally acceptable time and position stamp format. This ensures that the loosely coordinated activities undertaken during a study (i.e. a cruise) are, at least, comparable in terms of time and location. Recording time and space information in agreed upon formats with links to datasets enables later dataset integration within a centralized repository.

Since major shipboard activities, including over-the-side casts and tows, are coordinated with the ship's bridge, the first LTER CCE research cruise event log was maintained by the bridge using a pre-set or controlled vocabulary for event names. Events were of the following types:

- Ship arrival or departure to significant waypoints, such as a station
- Instrument or net deployment and retrieval
- Sampling system turn-on or turn-off

An event log is typically reviewed – completed, checked, and normalized – as rapidly as possible after a study. It is important both as a reference for individual groups and as the first step in entering study data input into the CCE LTER information system – a local, database driven repository for a project's cleaned and calibrated data.

