

Geophysical Monitoring System (GMS) development for IDC Re-engineering

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Sandia National Laboratories is developing the Geophysical Monitoring System (GMS) for modernization of the United States National Data Center waveform processing system. Concurrently, the International Data Centre (IDC) has begun the development phase of their IDC Re-engineering project to improve capabilities and maintainability of their waveform processing system. GMS has substantial overlap with IDC system requirements, so the United States is providing the common architecture and processing components of GMS as a contribution-in-kind to accelerate progress on IDC Re-engineering. GMS is a substantial re-implementation of the waveform processing system using modern software languages and patterns. High level objectives include improving configurability and flexibility, capture of data provenance to provide insight into processing results, and extensibility to accommodate new processing and analysis components based on innovations emerging from the monitoring research community. GMS is being released as open source for use by the IDC and member states. The first release was made available in December 2018 for IDC review. The next release (2019) will provide a generic runnable system including basic components for data acquisition, automated processing, and interactive analysis. This presentation describes GMS project goals and milestones, system architecture and design, and new user interfaces for waveform and event analysis.

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