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state-of-health monitoring with the Geophysical Monitoring System (GMS)

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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, including data acquisition, automated processing, and interactive analysis. The United States is providing the common architecture and processing components of GMS as a contribution-in-kind to accelerate progress on International Data Centre (IDC) Re-engineering. Open source releases of GMS have been made annually since 2018. Recently the GMS project has focused on developing an operational-quality Station State-of-Health (SOH) Monitoring capability, to enhance the ability of system operators to quickly recognize and address station availability and quality issues. This capability was provided to the IDC in the 2020 GMS open source release. The Station SOH Monitoring application has been designed to receive, process, and display SOH information from at least 300 stations using the CD-1.1 protocol, and to meet operational performance, deployment, and reliability specifications. System improvements include using a message-based, reactive software architecture, a Kubernetes container-ized deployment platform, and automated system testing capabilities. This presentation describes the GMS Station SOH Monitoring capability, system architecture and design, and deployment and operations.

Promotional text

A new Station SOH Monitoring capability is available in the latest GMS software release provided to the IDC Re-engineering project. This presentation describes this operational capability and improvements to system architecture, design, and deployment.

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