With Athena, you can access and review real-time and fully processed seismic event data via a secure web portal, from anywhere at any time.

**Athena**

**Critical seismicity information at your fingertips**

**How does Athena support risk management?**

- Continually tracks temporal variations in seismicity rates and b-values in your region of interest as a potential measure of the likelihood of occurrence of larger magnitude events.
- Measures the impact of detected seismicity via real-time ground motion measurements and reports.
- Displays maps of ground shaking distribution showing predicted ground motions in areas with no seismic stations.
- Reports on automatic event detection and manual event review response times, with the overwhelming majority of events detected in under 1 minute.
- Sends notifications based on custom magnitude, seismicity rate or ground motion thresholds.
- Supports automatic event import from public data feeds as a way of comparing your event source parameters to those from public catalogs.

**STRATEGIC INTELLIGENCE fueled by SCIENCE**

**Nanometrics**
## EVENT PARAMETERS
- Tracking and display of complete event source parameters including event location, location uncertainty, magnitudes (Mw and ML), moment tensors and focal mechanisms
- Station phase pick data
- Station magnitude and amplitude data
- Customized mapping by event attributes with user-provided reference overlays
- Catalog search and reporting capability by any event source parameter

## GROUND MOTIONS
- Geographical distribution of ground shaking (PGA, PGV, MMI)
- Calculated ground motions for each station in real-time following an event (PGA, PGV, RSA)
- Color coding of stations and recorded ground motions according to ground shaking intensity

## WAVEFORMS AND STATION METADATA
- Display of filtered event waveforms with P and S pick overlays
- Waveforms ordering by station or proximity to the event
- Supports downloading of waveform data in MiniSEED format and station metadata in dataless SEED format

## FREQUENCY-MAGNITUDE DISTRIBUTION PLOTS
- Computation and display of magnitude of completeness (Mc) and b-values
- Custom selection of event clusters in space and time
- Tracking and plotting of temporal variations in b-values in parallel with the seismicity rate graphs, in near real time

### Its ease of use makes for seamless organizational integration
- Displays focal mechanisms in Google maps
- Manages instrument and station metadata
- Allows easy selection and download of sections of the catalogue
- Supports a large user base, but allows you to grant each user only the privileges they need
- Allows for custom branding of the web interface

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<table>
<thead>
<tr>
<th>Parameter</th>
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With Athena, you can access and review near real-time and fully processed earthquake data via a secure web portal, from anywhere at any time.

**Critical information at your fingertips**

**How does Athena support risk management?**

- Athena graphs seismicity rates and b-values over a specified time frame and alerts you to increased rates of seismicity in your region of interest, indicating the likelihood of occurrence of larger magnitude events is increasing.

- Athena measures the impact of detected seismicity via real-time ground motion measurements and reports.

- Athena generates shake maps showing predicted ground motions in areas with no seismic stations.

- Athena reports on automatic and manual event review response times. The overwhelming majority of events are detected in under 1 minute (2 minutes maximum).

- Athena sends notifications based on magnitude, seismicity rate or ground motion thresholds.
EVENT MAGNITUDES AND LOCATIONS
• locations of stations and earthquakes, with the ability to display other visual features (wells, landholdings, etc.) using map layers
• frequency/magnitude relationships for event clusters
• moment magnitude (Mw) computations
• magnitude of completeness (Mc)

GROUND MOTIONS
• geographical distribution of ground shaking (PGA, PGV and MMI)
• shake maps with ground motions in grid points with no stations
• calculated ground motions for each station
• supports downloading of ground motion data in CSV format

WAVEFORMS
• each available waveform for the period surrounding a specific earthquake,
• groups waveforms by station and in order of proximity to the earthquake
• allows grouping of waveforms by pick type, and sorted by pick time and then channel SCNL
• supports downloading of waveform data in SEED format and station metadata in dataless SEED format

B-VALUES
• frequency distribution of the number of earthquakes across ranges of magnitudes (both cumulative and non-cumulative), the magnitude of completeness used to calculate the b-value and the b-value itself
• frequency/magnitude distribution
• graphs of temporal variations in b-values in parallel with the seismicity rate graphs

Plus, we’re continually updating Athena to ensure we offer the most comprehensive and robust software package available to operators. Look forward to these features in an upcoming release:
• Seismic risk management displays
• Shake maps as interactive overlays

- Displays focal mechanisms in Google Maps
- Manages instrument and station metadata
- Select and download sections of the catalogue
- Supports a large user base, but allows you to grant each user only the privileges they need
- Allows for custom branding of the Web interface