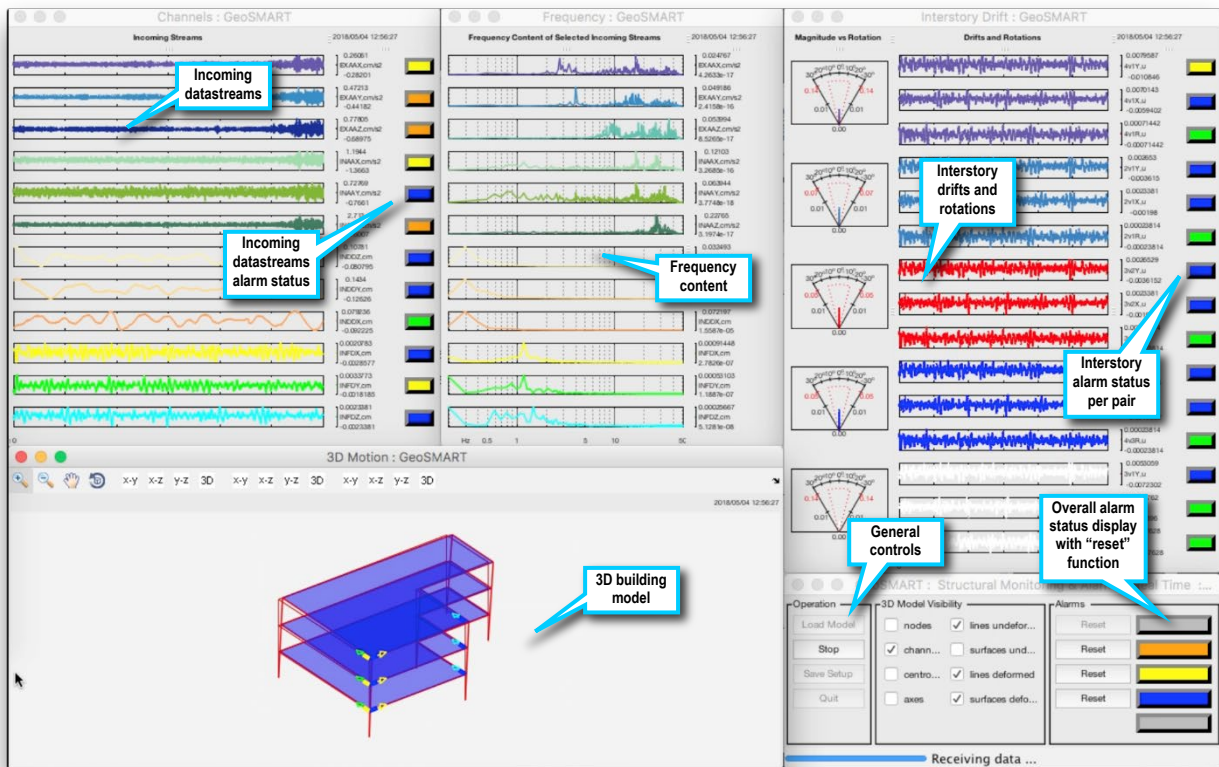


GeoSMART Software

GeoSMART is an innovative graphical Java-based application that provides tools for **real-time structural health monitoring** for civil engineering structures. GeoSMART, with its "smart" features, can monitor and display the status of a structure that is instrumented with GeoSIG measuring instruments.



Main Features

- Configuration based on a simple ASCII text file where all parameters and settings are defined.
- Plots a 3D model of a structure consisting of lines and surfaces.
- Connects to and receives near real-time data from GeoSIG instruments which send GSBUs streams.
- Organizes and plots the incoming streams as synchronized waveforms.
- Monitors the incoming streams against exceedance of 4 predefined levels and notifies user with visual indications (optional hardware relay activation through the serial port of the computer is available).
- Calculates and plots frequency content of desired incoming streams.
- Calculates and plots response spectra of desired incoming streams.
- Calculates rigid body translations and rotations on the X - Y plane.
- Calculates interpolated rigid body motions of non-instrumented bodies based on instrumented ones.
- Animates the translational and rotational motions of the 3D model.
- Calculates interstory drifts and rotational differences between any selected floor pairs' centroids.
- Plots interstory drifts and rotational differences as synchronized waveforms and in relative planar view.
- Monitors the interstory drifts and rotational differences against exceedance of 4 predefined levels and notifies user with visual indications (optional hardware relay activation through the serial port of the computer is available).
- Continuously saves incoming channels, interstory drifts (including rotational differences), frequency content and response spectra into ASCII text files which can be opened using GeoDAS software (or any other software that can process ASCII files).
- Replays previously recorded file instead of real-time streams.
- Sends emails in case of exceedance of predefined levels or in case of errors.

GeoSMART has been designed to meet fundamental engineering requirements with respect to structural health monitoring applications.