

Observer

DATA ANALYSIS & OMA SUITE

Deep Insight. Modal Truth.

Advanced signal processing + OMA with geometry-based 3D visualization.

Why Observer

- Full OMA toolbox: FDD, EFDD, FSDD, SSI-Data, SSI-Cov, PLSCF.
- Geometry editor with DOF mapping and 3D mode-shape animations.
- MAC verification and comparative animations for cross-validation.
- Stabilization diagrams & SVD aids to speed reliable mode picking.
- Damping estimation & confidence checks for defendable results.
- Export animated modes (GIF/MP4) and report packs for stakeholders.

What makes it different

- Complete signal chain: filters, detrend/decimate, FFT/PSD, spectrograms, response spectra.
- Multi-setup OMA with reference sensors for large structures.
- One-click PDF reports compiling data, stats, OMA results, and figures.

Made for

Operational checks • Offline studies •
Quick event triage • Report graphics

How Observer fits your SHM



- End-to-end OMA: ingest continuous or campaign data → preprocess (filters/decimate) → run multiple OMA methods.
- Geometry-centric: build/import structure geometry, map sensors/axes, and visualize mode shapes directly.
- Verification loop: stabilization diagrams, SVD picking, damping curves, and MAC help validate results before sign-off.

Manage your deployment

Import: MiniSEED, ASCII.

OMA: FDD/EFDD/FSDD/SSI/PLSCF; stabilization/SVD picking.

Geometry: 3D editor, DOF mapping, GIF animations.

Verification: MAC matrices, comparative modes.

Reporting: Advanced PDF reports.

OS: Windows 10/11 (64-bit).

Outcome snapshot

- Trusted modal IDs: get results across FDD/EFDD/FSDD/SSI/PLSCF, confidence in frequencies/damping/modes.
- Rich visuals: 3D geometry with DOF mapping and animated mode shapes communicate findings clearly.
- Quality control: MAC matrices and side-by-side comparisons verify stability between methods and setups.
- Faster delivery: one-click reports assemble data, figures, and conclusions for stakeholders.

Your workflow with Digitex

- **Instrument:** import MiniSEED/ASCII; define channel roles and sampling.
- **Acquire:** preprocess (detrend/filter/decimate); segment data.
- **Analyze:** run OMA methods; pick modes; animate; compute damping/MAC.
- **Act:** compile verification matrices, figures, and conclusions into a report.
- **Operate & scale:** reuse templates for similar structures; compare new surveys against baselines over time.

CE • ISO • Calibration certificate

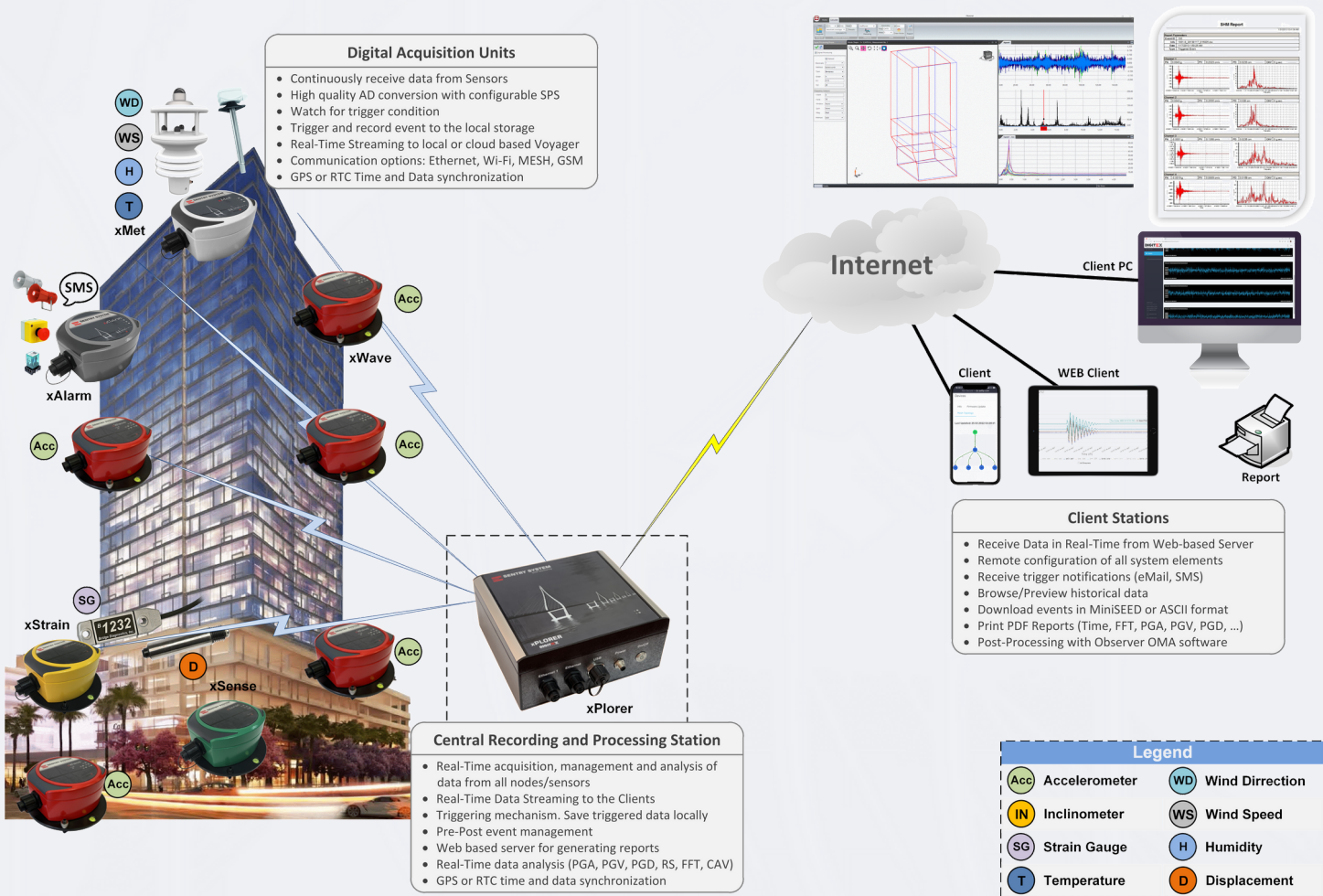
SHM SOFTWARE OVERVIEW

Digitex software is the intelligence layer of the Sentry System—turning raw sensor streams into reliable engineering insight. Built specifically for Structural Health Monitoring (SHM) and earthquake engineering, the suite covers the full lifecycle of a project: acquisition in the field, continuous storage and alerting, professional visualization, advanced analytics, and publishing of audit-ready reports.

Digitex SHM Software is a cohesive suite that acquires, manages, analyzes, and communicates structural data—from live streams to publishable results. Voyager serves as the central, web-based hub for configuration, time alignment, recording, alarms, and reporting. Nexus supervises real-time feeds on operator PCs, providing local recording and quick sanity checks. Vista opens measurement files for fast visualization, statistics, and conversions. Observer delivers advanced signal processing and Operational Modal Analysis with geometry-based 3D mode-shape visualization. Together, they turn raw measurements into synchronized, defensible insight with automated outputs for stakeholders.

SHM SOFTWARE MEMBERS

The SHM Software family consists of the following applications, which can be used individually or as part of a complete Digitex deployment: **Voyager** – server software for acquisition, device management, triggering, streaming, and automated reports; **Nexus** – SeedLink client for supervising live stations with local MiniSEED recording; **Vista** – data viewer and converter for plotting, statistics, filtering, FFT/PSD, and CSV/PNG export; **Observer** – analysis and OMA suite for FDD/EFDD/FSDD/SSI/PLSCF methods with 3D geometry and reporting.



Sentry System Real-time Monitoring

ABOUT DIGITEX

Digitex is a company specialized in design and development of real structural health monitoring systems for a variety of industries and applications including: bridges, tall buildings, campuses, windmills, oil rigs and more. Digitex's innovative solution for ambient vibration measurements and quick health assessment of structures is jointly developed and validated with our partners and advisors from the Universities. When properly configured, the Digitex system is capable of measuring and responding to both natural and man-made events such as: earthquakes, wind, explosions and accidental heavy impacts.