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The Advanced National Seismic System: Management and Implementation

ANSS

Of all natural hazards, earthquakes pose the greatest risk for casualties and damage in the United States. Congress asked the U.S. Geological Survey to assess regional seismic networks and provide recommendations for modernizing seismic monitoring. The outcome is the Advanced National Seismic System.

What is the Advanced National Seismic System?

The Advanced National Seismic System (ANSS) is designed to organize, modernize, and standardize operations of seismic networks in the United States to improve the Nation's ability to respond effectively to damaging earthquakes, volcanoes, and tsunamis. To achieve this, the ANSS will link more than 7,000 national, regional and urban monitoring stations in real time.

Management of the ANSS

The fundamental organizational principles of the ANSS are:

- National oversight and support
- National-, regional-, and local-level planning and implementation
- Standardized equipment and uniform products and services
- Integration of all elements

To ensure effective use of seismic data and products for mitigation of earthquake, volcano, and tsunami hazards, an ANSS management structure has been established whose main components are a National Steering Committee, National Implementation Committee, and Regional and National Advisory Committees.

National Steering Committee

Provides overall direction of the ANSS. Sets priorities for urban, regional, and national upgrades and installations, and approves and revises as necessary the planning recommendations of the National Implementation Committee. Reports to the Director of the USGS and works in close consultation with the ANSS Manager.

ANSS National Steering Committee Membership

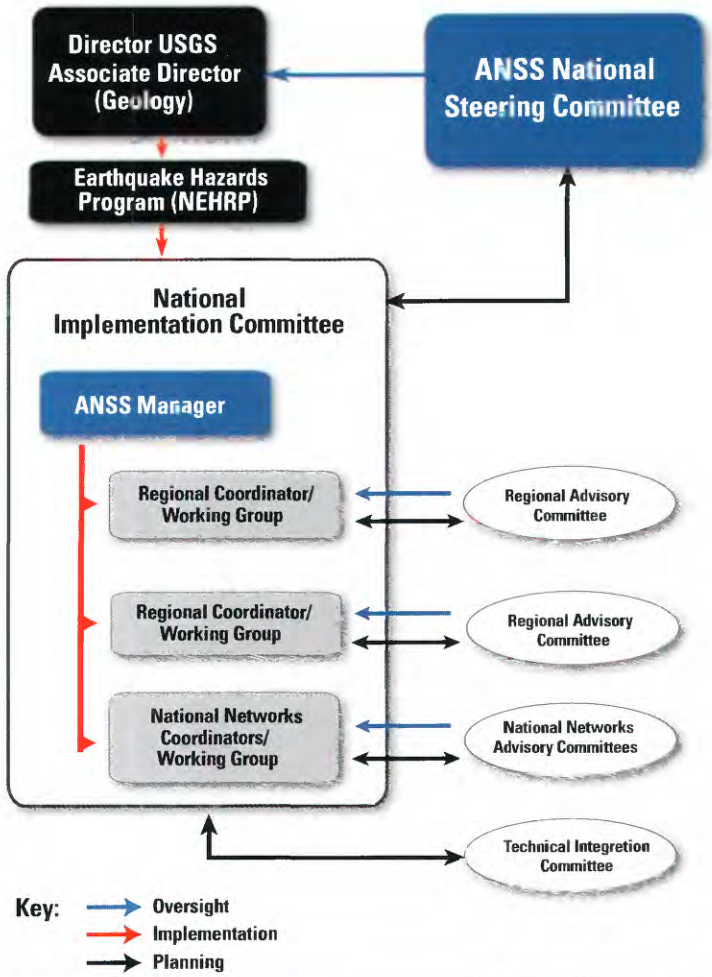
American Association of State Geologists
Consortium of Organizations for Strong Motion Observation Systems
Earthquake Engineering Research Institute
Incorporated Research Institutes in Seismology
National Emergency Management Association
Seismological Society of America
United States Geological Survey

Non-Voting Members

Federal Emergency Management Agency
National Science Foundation
National Institute of Standards and Technology

National Implementation Committee

Develops implementation plans in consultation with Advisory Committees. Reports planning recommendations to the National Steering Committee. Commissions functional committees, as needed, to address particular implementation issues, which may be of national or regional interest.



ANSS Manager

Overall responsibility for implementation of the ANSS. Directs regional coordinators and functional implementation teams. Works in consultation with National Steering Committee and National Implementation Committee to operate and maintain the ANSS.

ANSS Regional/National Coordinators

Responsible for regional/national implementation of the ANSS. Work with the Advisory Committees to develop plans and implementation schedules. Spokespersons for the ANSS and oversee ANSS operations in the regions.

Regional Advisory Committees

Work with the regional coordinators to develop plans, schedules, and procedures for installation and operation of seismic monitoring in the regions. Help to develop public-private partnerships for the ANSS in the regions. Representation from the seismological, engineering, and emergency management communities as well as relevant regional and national programs and other interested groups.

National Networks Committees

Represents the interests of national-level monitoring systems, such as the National Earthquake Information Center, United States National Seismograph Network, Global Seismograph Network, and National Strong Motion Program. Coordinates ANSS national monitoring activities with other agencies or entities with national interests in earthquake, volcano, and tsunami hazard mitigtation.

Technical Integration Committee

Commissioned by the ANSS Management, the Technical Integration Committee (TIC) provides technical guidelines and specifications under which the ANSS will operate to ensure uniform products and services to the Nation. Five subcommittees have been formed to develop the design and performance standards for the system and procurement specifications for ANSS equipment.

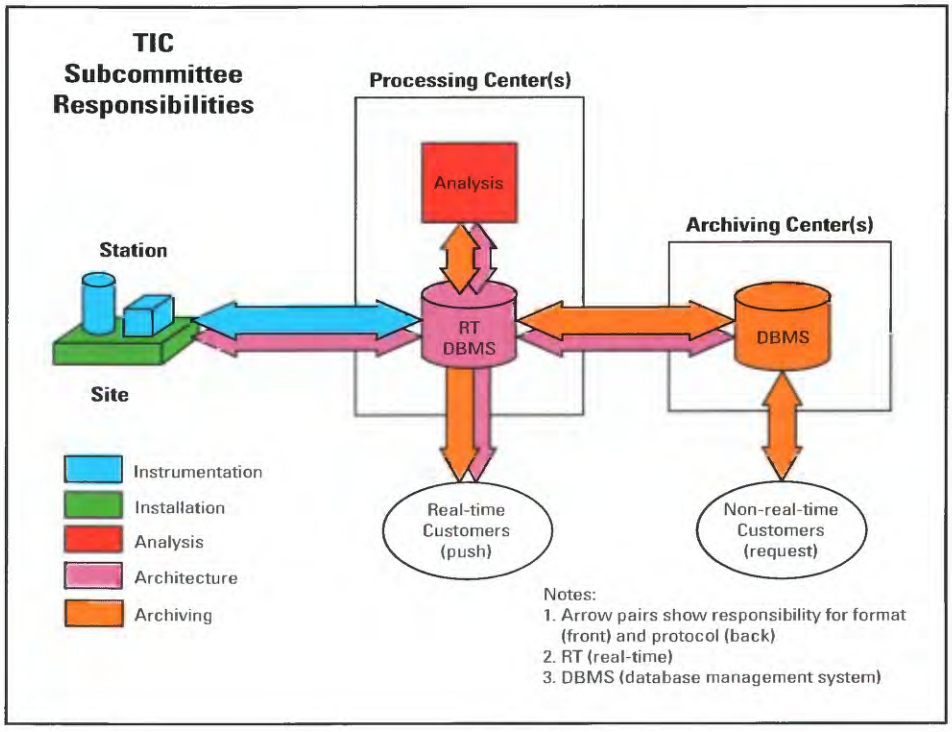
Instrumentation. Establishes procurement standards and procurement specifications for sensors, data loggers, and other hardware components to meet user needs.

Site Installation. Prepares guidance documents for all aspects of sensor siting and installation for national, regional, and urban sites.

Data Analysis and Products. Based on needs of users, develops specifications for ANSS standardized data processing and coordinates the development of standardized products and information about recent earthquake and volcano activity.

Network Architecture and Interconnection. Develops specifications for the integrated design of national, regional, and urban monitoring components and for communications among the components (sensors, data centers, and real-time recipients of data and products).

Data Archiving and Distribution. Based on the needs of users, develops specifications of ANSS-standardized data archiving and distribution, including the specification of standard formats.



Summary

The Advanced National Seismic System represents the most significant development in U.S. earthquake and volcano hazard mitigation efforts in decades. Although it will take considerable effort on the part of seismologists, engineers, and emergency planners, careful planning and widespread involvement of these and other interested communities will greatly improve our ability to assess and respond to damaging earthquakes, volcanoes, and tsunamis.

For more information, visit the web site: www.anss.org

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