



Organisation of the North East Eurasia Reference Frame

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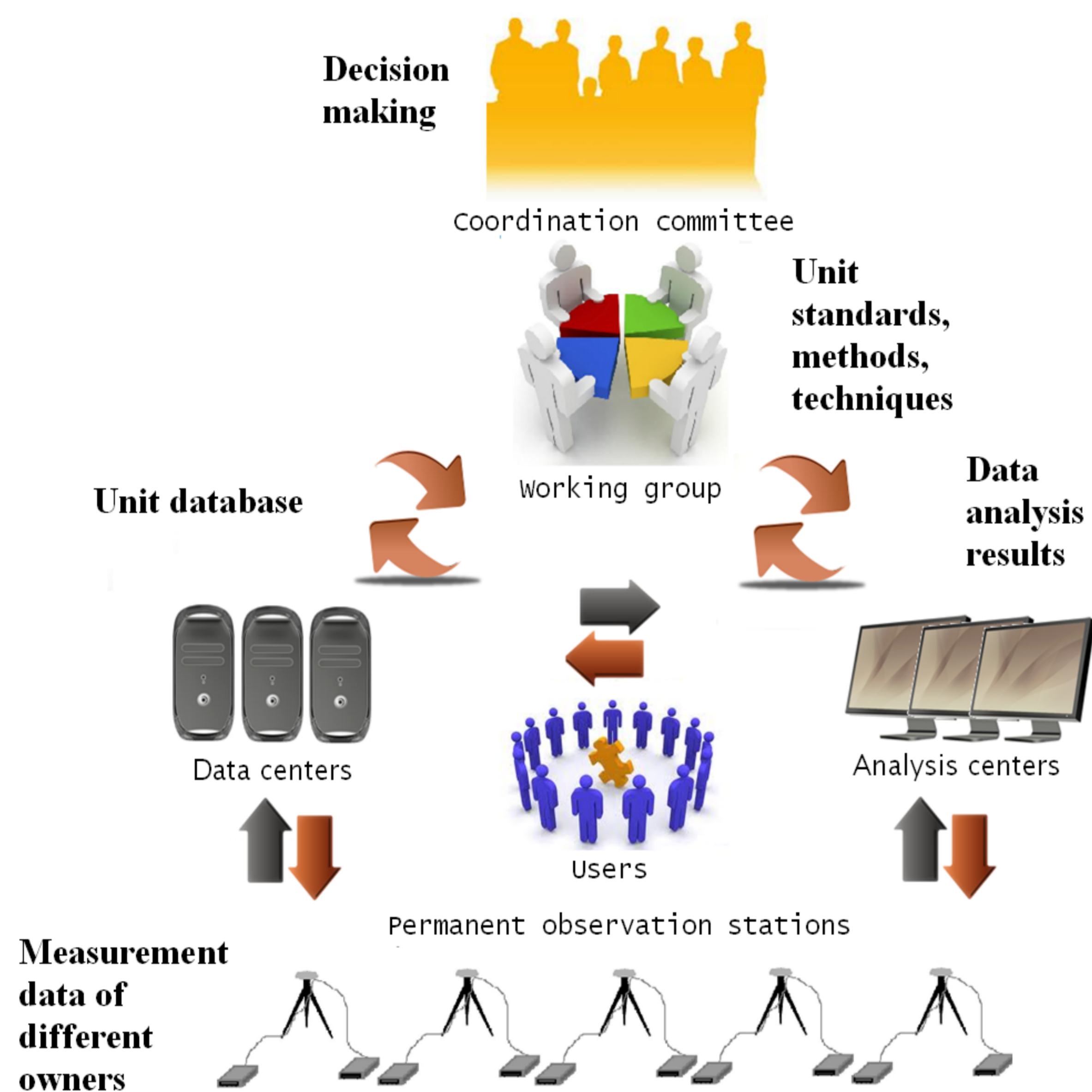
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Statute on the Regional Reference Frame Commission for North-East Eurasia – NEEREF

Background

International Commission on Regional Terrestrial Reference Frame of North East Eurasia (North East Eurasia Reference Frame - NEEREF) is organising by the initiative of the Geodesy Section of the National Geophysical Committee of Russian Academy of Sciences. It is voluntary association of the organisations of various form of ownership and of the various organisational and legal form. NEEREF co-ordinates the scientific collaboration between commission participants in the field of creation and development of terrestrial reference frame. It encourages the development of joint coordinate, height and gravimetric reference systems in Eastern Europe, North Eastern and Central Asia. It realises efforts for creation and development of joint permanent observation network with the aim of global reference frame densification, control and stability of the regional reference frame, among them support of geophysical monitoring using GNSS. NEEREF joint intentions of creation of unit height frame and common geoid. One of NEEREF tasks is a promotion in adhering of recommendations of international geodetic organisations in the process of it's activity.

Structure design



Expected results

- Common coordinate reference frame
- Weekly regional coordinate solutions
- Coordinate time-series and velocity vectors
- Tropospheric and ionospheric characteristics (delays, maps, etc)
- Geomagnetic observation for join magnetosphere research
- Data for national and international usage

Current data owners and analysis centers

- Moscow State University of Geodesy and Cartography, Moscow, Russia,
- Institute Tectonics and Geophysics, Far Eastern Branch of Russian Academy of Sciences, Khabarovsk, Russia
- Siberian State Geodetic Academy, Novosibirsk, Russia
- Central-Asian Institute for Applied Geosciences, Bishkek, Kyrgyz Republic
- Open Joint Stock Company Roskartografia, Moscow, Russia,
- Central Research Institute of Geodesy, Aerial Survey and Cartography, Moscow, Russia,
- Geophysical Center, Russian Academy of Sciences, Moscow, Russia, kaftan@geod.ru
- Pulkovo Observatory, Saint-Petersburg, Russia
- Schmidt Institute of Physics of the Earth, Russian Academy of Sciences, Moscow, Russia

Current examples of production

Russian Reference Frame and cite velocities on 2012 epoch



Preliminary organization structure

Participants caring out scientific collaboration in the frame of standards of International Association of Geodesy and by way of the initiative of National geophysical committee of the Russian Academy of Sciences, Geodesy Section. Participants form the technical working group (TWG) of the North-East Eurasian Terrestrial Reference Frame and analysis centers providing development of harmonized solutions (the integrated coordinate solutions, time-series of coordinate changes, ionospheric models, tropospheric delays and other results).

Distribution of functions between participants and definition of conditions of access to measuring data and to results is carried out on the basis of a free choice and the mutual arrangements concluded on national and international levels.

NEEREF rights

Regional Reference Frame Commission for North-East Eurasia (NEEREF) and its technical working group NEEREF TWG develop harmonized recommendations on

- Measuring means composition and software of sites taking part in the creation development of regional reference frame NEEREF
- Monumentation and stability control of NEEREF site monuments
- Measurement modes of NEEREF stations
- Organization on data exchange between participants
- composition of NEEREF data analysis centers.

NEEREF goals

NEEREF coordinates scientific collaboration between participants of the commission in the field of creation and development of the North-East Eurasian Terrestrial Reference Frame.

NEEREF facilitates the development of unite coordinate, height and gravimetric systems in East Europe, North and Middle Asia, and other countries of Eurasia.

NEEREF realizes joining together efforts to construct and development of unit geodetic permanent network with the aim of accuracy and stability control of the North-East Eurasian Terrestrial Reference Frame, to observe movements and deformation of the earth's crust, with includes of geophysical (seismic and meteorological) monitoring with the use of Global Navigation Satellite Systems (GNSS). Thus NEEREF tries to reach the sufficient density of points locations and joint free access to measuring data and processing results for all participants of NEEREF.

NEEREF combines efforts in development of a uniform height reference frame and creation of the common geoid. NEEREF provides the free creative environment for development and an exchange of modern technologies, developments of modern coordinate, height and gravimetric systems of regional (continental) scale.

NEEREF promotes implementation of recommendations of the international geodetic organizations in activity on development and maintenance of the regional North-East Eurasian Terrestrial Reference Frame.

NEEREF assists in carrying out an expertise of national projects of creation and development of modern national terrestrial coordinate reference systems with use of the latest measuring means of GNSS, VLBI and other observation systems.

NEEREF sites

NEEREF array includes the sites corresponding to recommendations of NEEREF and its technical working group NEEREF TWG. The organizations to which they belong on the property right or on other lawful basis, signed the agreement with NEEREF about providing data for joint processing, development of the harmonized solutions and their open publication for science and the international cooperation.

Joint permanent reference frame



Ionospheric and deformation regional frame response on Tohoku earthquake

