

# Proposal for a Resolution/Recommendation on ITRS/ITRF for consideration by the UN-GGIM Committee of Experts



UN-GGIM

United Nations Initiative on  
Global Geospatial Information Management

*Positioning geospatial information to address global challenges*

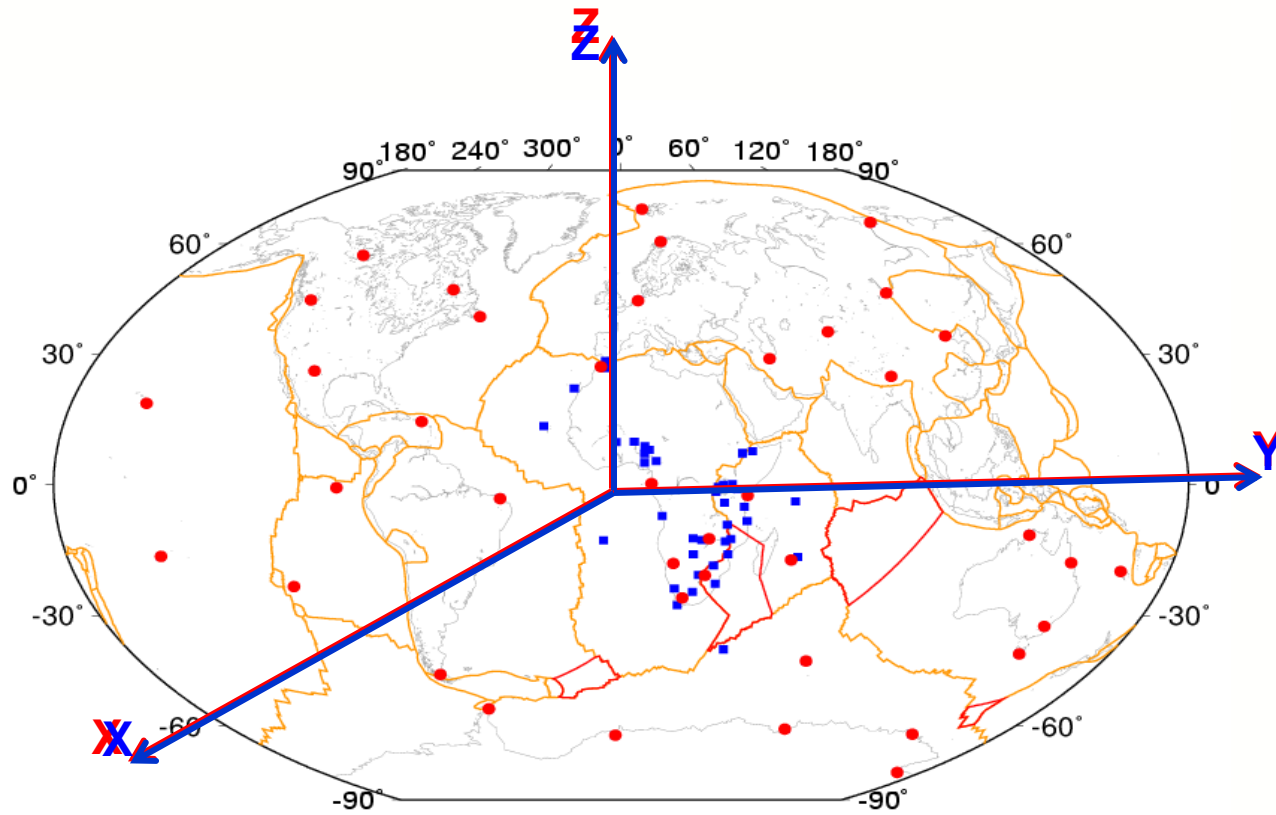
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# Recommendations

- The UN-GGIM Sub-committee on Geodesy agrees that the **International Terrestrial Reference System (ITRS)**, through its numerical realization, the **International Terrestrial Reference Frame (ITRF)**, be adopted for geospatial and scientific positioning applications. This adoption may be achieved by closely **aligning** to the ITRF.
- Recognizing the development of ISO19161-1 document on the ITRS, currently at the Draft International Standard (DIS) level, the Sub-Committee urges member states to record their national reference frame details, and **its alignment to the ITRF**, in the ISO Geodetic Registry
- The Sub-Committee takes note of the **developments** that are currently undertaken by the IAG for the definition and realization of the International Height Reference System (**IHRS**).



# Alignment



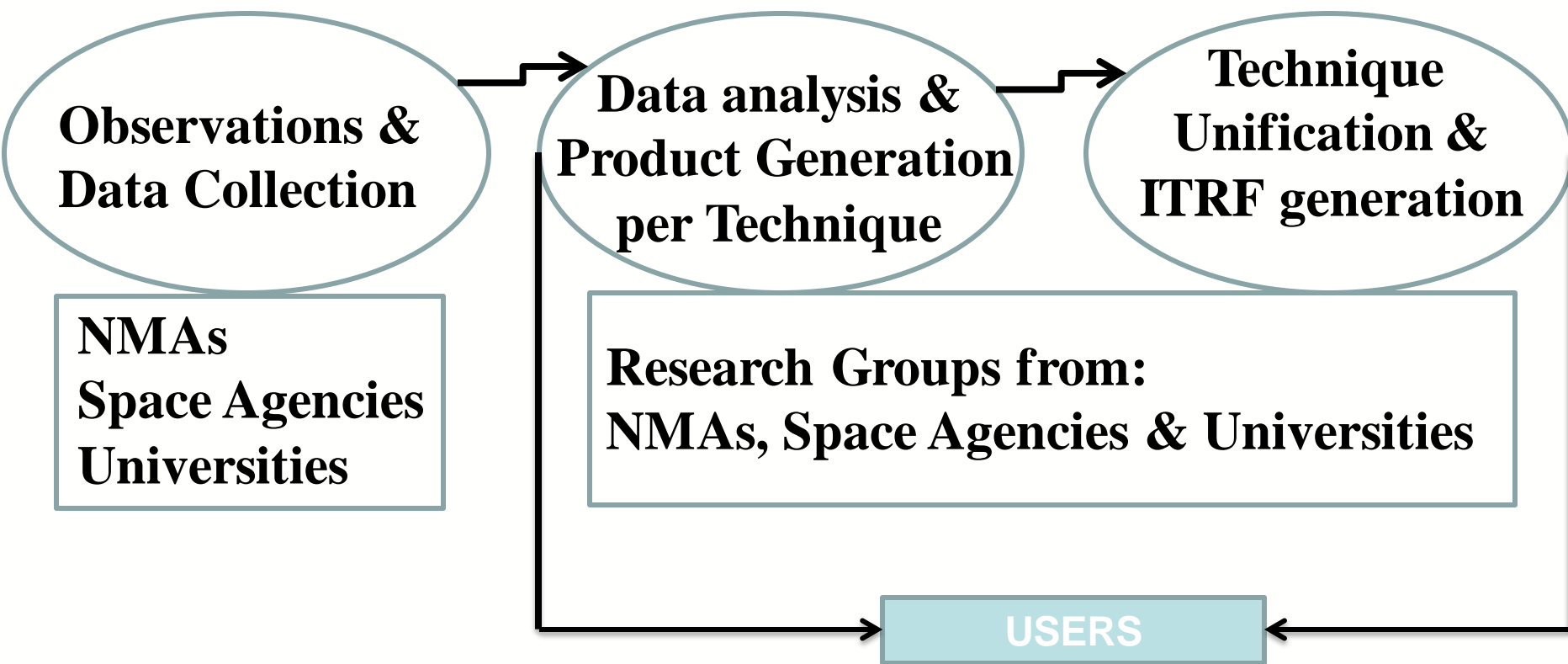
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# ITRF: an International Effort, based on the “best effort” principle



Schematic illustration of the chains leading to the ITRF generation



# Some Facts: Reasons why we need a Committee “Resolution” on ITRS/ITRF (1/3)

- The International Terrestrial Reference System (ITRS) is recommended by the International Unions (IUGG and the IAU) for applications in space and Earth science applications
- **ICG Recommendation #12:** GNSS-specific reference systems and frames (WGS84 for GPS, PZ-90 for GLONASS, CGS2000 for Baidu/China, GTRF for Galileo, JGS for QZSS) are all aligned to the ITRS/ITRF
- 88% (tbc) of Member States rely on the ITRF to build their national reference frames (Ref: UN-GGIM geodetic questionnaire, 2013)
- An ISO Standard document is in progress (at stage **DIS**: Draft International Standard):
  - **P-members in favour: 25 (5 with comments)**
  - **P-members voting against: 0**
  - **P-members abstaining: 11**



# Some Facts: Reasons why we need a Committee “Resolution” on ITRS/ITRF (2/3)

- The International Committee for Weights and Measures (CIPM) agreed in October 2009 on the need of supporting the adoption of the ITRS as the reference for geodetic metrological applications,
- The General Conference on Weights and Measures (CGPM) adopted in October 2011 a resolution recommending the adoption of the ITRS as the unique system for terrestrial reference frames for all metrological applications.



# Some Facts: Reasons why we need a Committee “Resolution” on ITRS/ITRF (3/3)

- There is some serious confusion within the geodetic community between GGRF and ITRF
- If we (UN-GGIM, ScoG) don't follow the international resolutions, then we might appear as if we want to create or duplicate other system(s), contrary to the spirit of the UN-GGIM initiative
- A standard reference system/frame is fundamental for ensuring the interoperability of geospatial datasets and applications
- There is a desire from the user communities to have an official resolution on adopting the ITRS/ITRF, as a legal standard, e.g. ISO standard



# Final remarks

- We (ScoG) can formulate a text of a “recommendation” to be as clear as possible and agreeable to all, following existing resolutions by the international unions
- The ITRS definition, maintenance and realization is currently under the responsibility of the IERS, as delegated by the international unions (IUGG, IAG, IAU). The IERS then decides on the official versions/solutions to be adopted
- **ITRS/ITRF is an IAG achievement**
- Any future change re: ITRS/ITRF responsibility will be followed by resolutions/decisions by the international unions anyway.
- The text is (and should be) about the ITRS and its realization, the ITRF, but not a particular version (ITRFyyyy).
- **The IHRS does not exist yet, but the current developments by the IAG towards its realization must be acknowledged in the recommendation**

