Future ITRF Solutions, Interaction with the CPP and Future IERS products?

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The ITRF: some facts

- **Is not** a routine Product of IERS
- **Is a long-term Standard Frame for:**
  - Earth Science Applications
  - Practical geodetic Applications & National Datums
  - A Reference (to be) used by Technique/Analysis Centers for Datum Definition of their products
- **Should be Accurate, Stable, Reliable, etc.**
- **Relies and depends on :**
  - TC products
  - Local Ties in Co-location Sites
- **Should not replace, but be compatible with individual TC Frames (e.g. follow IGS scheme)**
How frequent should be the ITRF solutions?

- Based on ITRF PC Experience
  - Users don’t like ITRF to change too often or large datum changes with updates
  - But users demand quality
  - TCs and others need some time to switch to a new ITRF (e.g. IGS, POD, long-term altimetry analyses)

- New ITRF solution expected in case of significant improvement in:
  - Local Ties and number/distribution of co-locations
  - Individual TC/AC solutions
  - Combination methodology/parameters

- 1 year < ITRF life-time ≤ 4 years
ITRF – CPP – New IERS Products ? (1/2)

• ITRF could not be replaced by, e.g. weekly solutions
• ITRF is needed for & useful in the CPP (& other areas) for:
  – Datum definition
  – Specialized studies
  – Validation
• Should be consistent with EOPs & ICRF
• EOPs are included in the ITRF2004, but
  – EOPs maintenance and continuity are needed and should be consistent with ITRF2004 over time
  – Procedure within the CPP should be developed
  – E.g. Strategies by Altamimi & Ray, Nice 2004
• ITRF PC plans to combine globally ITRF, EOPs and ICRF for the next run, and studies to start within the CPP at weekly basis ==> This needs contribution of ICRF and EOP PCs
• New (?) IERS products need to be defined & validated:
  – Global products (ITRF, EOPs, ICRF) are well identified, but consistency has to be improved
  – Should IERS generate weekly station positions or should IERS leave this to TCs (e.g. IGS) ?
  – Individual TC frames are (should be) internally more consistent than ITRF, but compatible with the ITRF datum definition
  – Adding local ties at weekly basis may distort unevenly the frame parameters & EOPs, see Altamimi Napa presentation, 2004
Summary (1/2)

- IERS is and should remain the provider of the Global Standards (ITRF, EOP & ICRF)
- ITRF, EOP & ICRF should be preserved and their consistency enforced
- 1 year < ITRF life-time ≤ 4 years
  - ITRF2004 to freeze for public use
  - Weekly updates to monitor EOPs and frame
- To ensure consistency, the IERS PCs should work together in a cooperative way
  - ITRF PC and EOP PC are ready to work immediately after the ITRF2004
  - ICRF PC contribution/involvement is essential
Summary (2/2)

• Enforce and encourage the role of the CRCs within the CPP to develop, test & validate:
  – Strategies & parametrizations
  – New products

• TCs are encouraged/assisted to elaborate their own ITRF-compliant realizations (e.g. IGS)

• New Products should be clearly identified:
  – Consider user needs and rationality
  – Compatible with IERS global references
  – Harmonized & compatible with TCs products
  – Leave room for TCs to promote their own products