

***REPROCESSING***  
***Analysis Centres,***  
***strategies, station issues,***  
***discussion***

***I. Romero***  
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# Participating Institutions

<u>Abb.</u>	<u>Activity</u>	<u>Institution</u>	<u>SW</u>
<b>GFZ</b>	AC ACC	GeoForschungsZentrum	<b>EPOS</b>
<b>PDR</b>	AC	GFZ Potsdam, TU Dresden Potsdam Dresden Reprocessing (formerly TUM/TUD)	<b>Bernese</b>
<b>NGS</b>	AC	National Geodetic Survey	<b>page5</b>
<b>SIO</b>	AC	Scripps Institution of Oceanography	<b>GAMIT</b>
<b>ESA</b>	AC	European Space Agency / ESOC	<b>NAPEOS (BAHN)</b>
<b>EMR</b>	AC	Natural Resources Canada	<b>GIPSY</b>
<b>(Possible future AC additions: COD, JPL, others?)</b>			
<b>EMR</b>	SINEX Comb.	Natural Resources Canada	
<b>NCL</b>	SINEX Comb.	Univ. Newcastle upon Tyne	
<b>NRL</b>	Timescale	Naval Research Laboratory	
<b>UNT</b>	-	Univ. of Nottingham	
-	TZD Comb.	-	

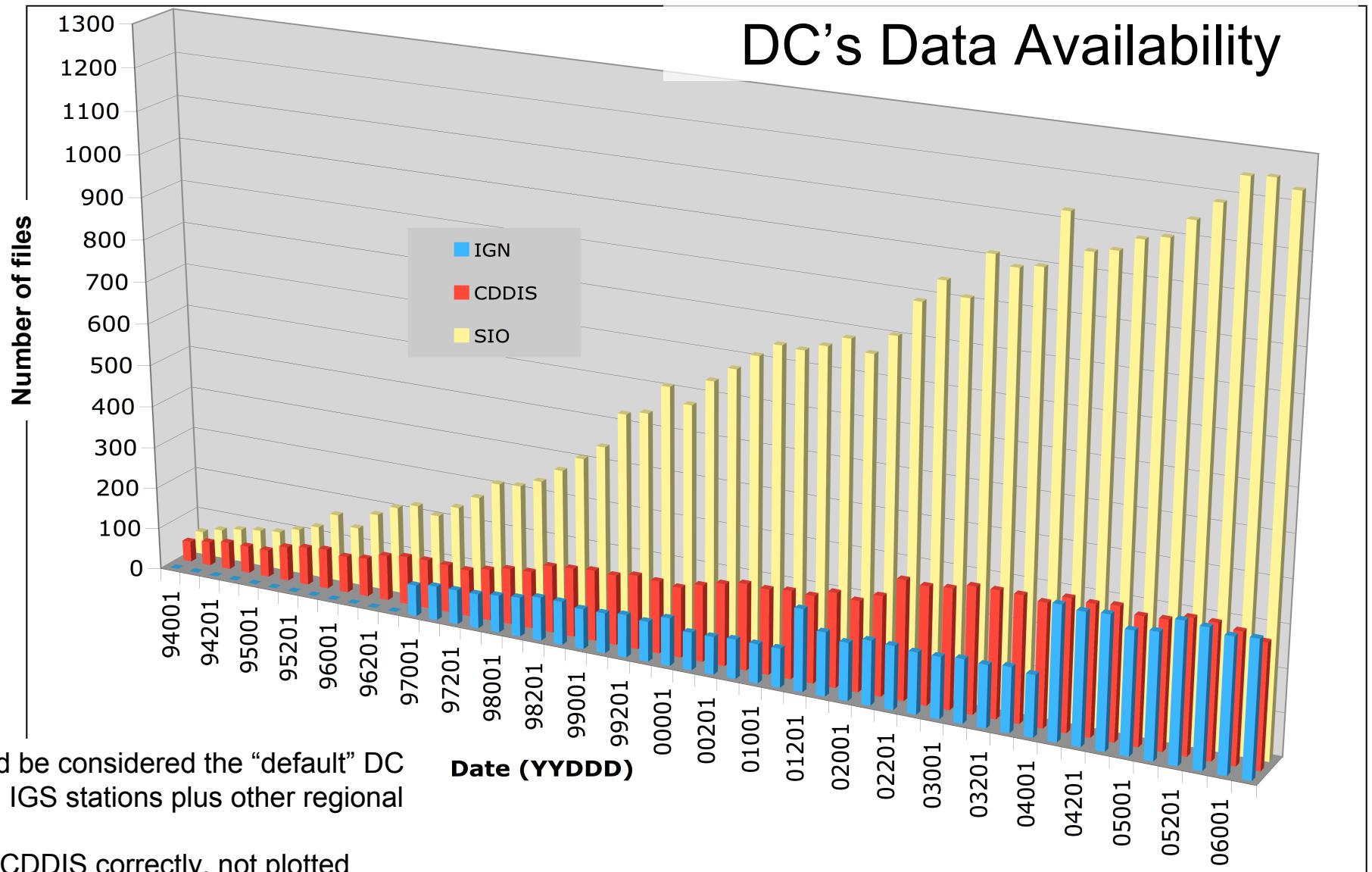
# Repro AC Responsibilities

- **Collecting RINEX data from DCs**
- **Selecting stations as required and agreed by the REPR coordinators**
- **Estimating products (orbits, EOPs, clocks, TZD, coords) following agreed conventions**
- **Treating station discontinuities consistently ...**
- **Reporting problems**
  
- **As all ACs (except one) are regular IGS ACs the .acn files stored in the IGSCB can be analysed ... but in these one can find ambiguous or incomplete information, so a new summary is needed for the ACs.**



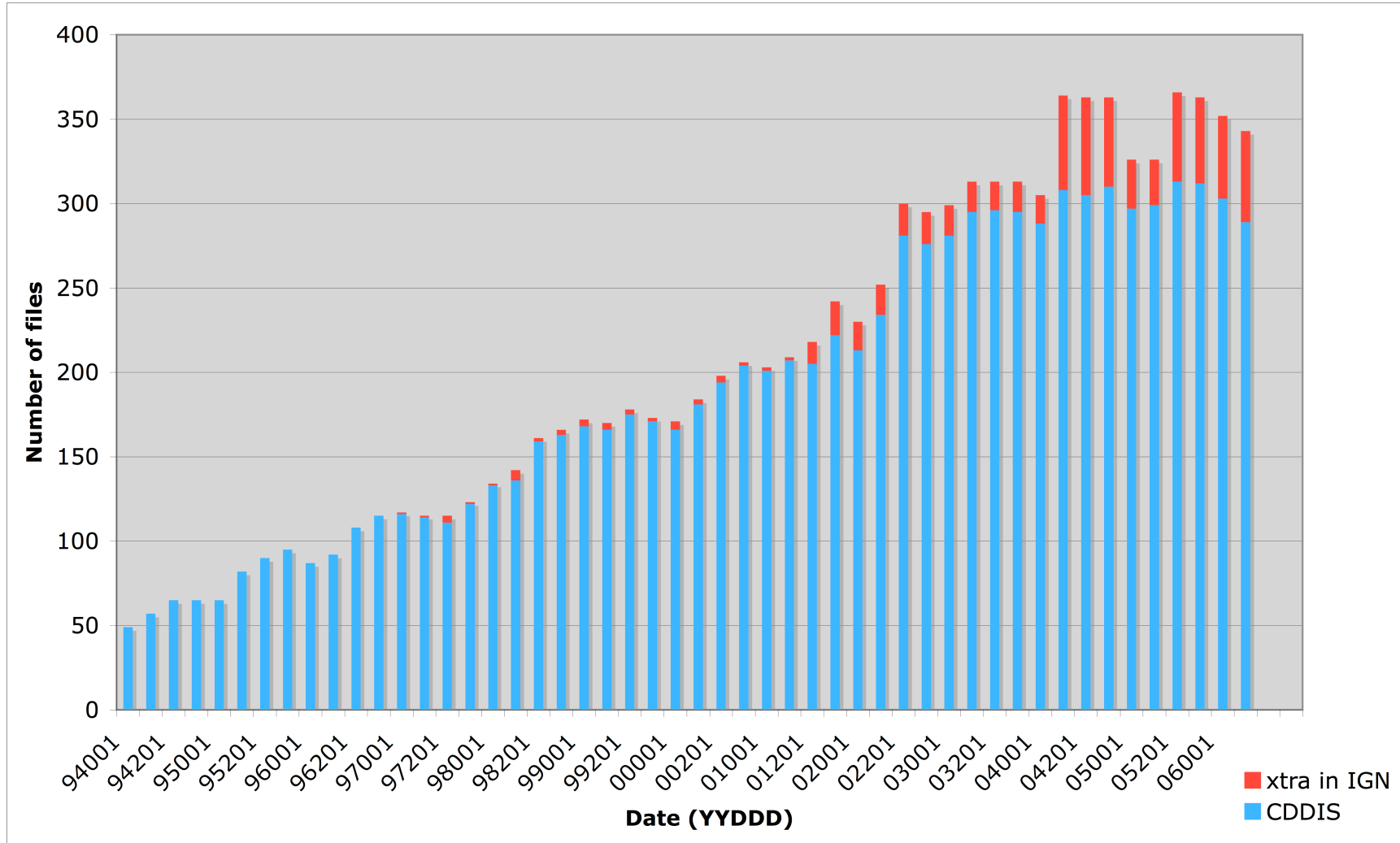
## Station issues

- There are 385 stations in the latest **igs.snx** (valid current logs), useful old stations being added at IGSCB.
- A look has been taken to see actual data holdings at DCs, station availability in general, AC station use in IGS, etc.
- A list of priority stations is available from different constituent groups. To ensure maximum benefit from reprocessing some coordination is needed.



- CDDIS should be considered the “default” DC
- SIO stores all IGS stations plus other regional US stations
- KASI mirrors CDDIS correctly, not plotted
- IGN mirrors CDDIS for recent epochs (2+ yrs) with some additional stations ...

# CDDIS+IGN Data Availability





# AC station usage

- **Limitation of station usage varies by AC, as can discerned from IGS Final submissions:**

GFZ	SIO	NGS	ESA	EMR	PDR
180+	90+	150+	100+ (60+)	50+	160+

- **Some ACs may not be able to add more stations or may have their own priorities, others can add stations ...**
- **It is expected, that some coordination of station usage can take place to ensure the best possible results from the Reprocessing (3 ACs per station, min)**

# Reprocessing Station Selection

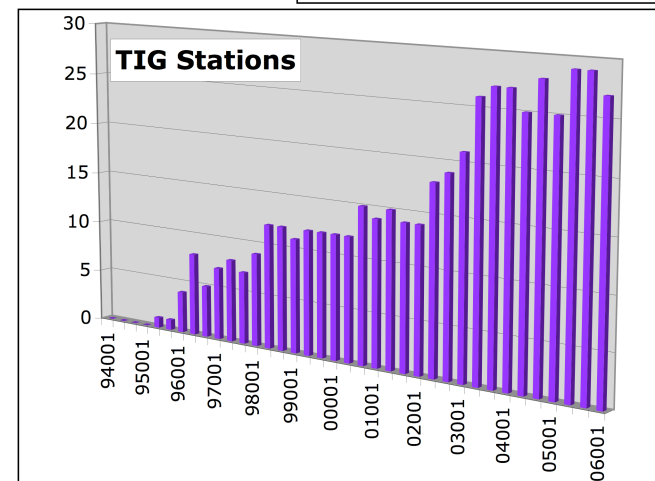
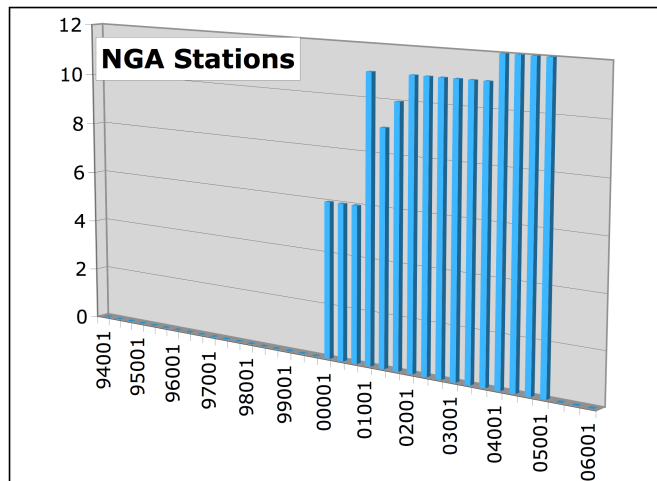
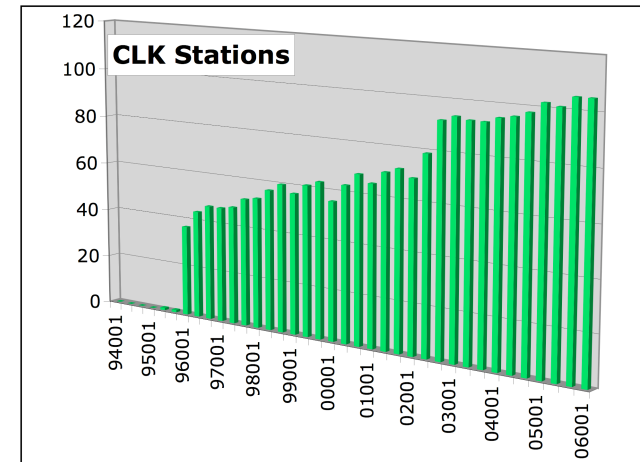
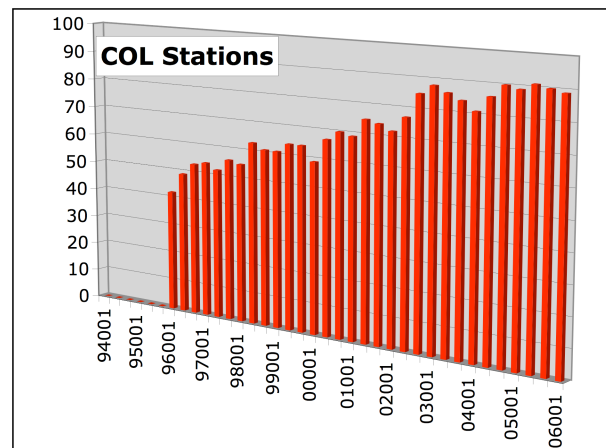
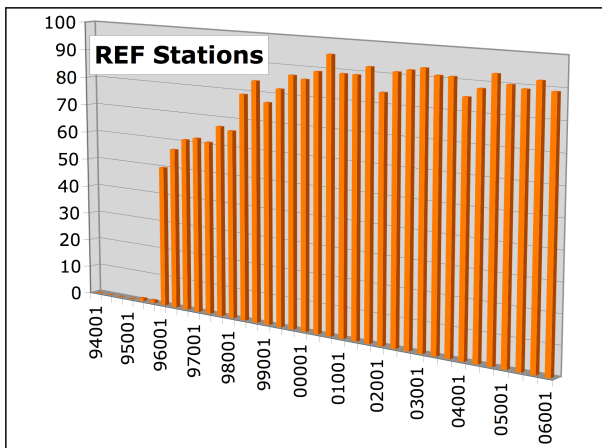
- **Interest groups: Ref. Frame, Co-located stations, Timing sites (Hm, Cs), NGA sites (NIMA), TIGA ;**

Ref. Frame	Co-located	Timing	NGA	TIGA
100+ stations	100+ stations	~115 stations	12 stations	65+

- **All those stations are not available over the entire period so the situation is quite variable.**
- **And some of the stations are in several of the lists so the situation is simplified somewhat ...**
- **In the case that coordination is not possible and stations are left out an IGS PPP effort may be needed.**

# Station Selection Explored (i)

- Stations change over time. The “current” station lists availability over time (at CDDIS):



# Station Selection Explored (ii)

- **Stations are duplicated between lists:**

<u>Ref. Frame</u>	<u>Co-located</u>	<u>Timing</u>	<u>NGA</u>	<u>TIGA</u>
100+ stations	100+ stations	~115 stations	12 stations	65+ stations
-	50 % in prev list	85 % in prev lists	0 % in prev lists	37 % in prev lists
100+ new stations	51 new stations	18 new stations	12 new stations	43 new stations

224 Unique stations

## Station Selection Explored (ii)

- If we have 6 ACs each one would have to process 112 stations max to cover all the stations with 3 ACs.
- The reality is some stations may be over-subscribed, some under-subscribed. Two possible methods are proposed (R. Ferland, I. Romero):

→ 1. Publish the two lists that the stations can be split into and ask ACs to pick one (which fits their current station selection best), ask ACs to what % they can cover their “picked” list and try to reassign if needed.

OR:

2. Ask for all ACs current preferred processing station list, their spare capacity (if any) and % of current station they can change. Make customised lists to cover all stations with 3 ACs as well as possible.

- Method (1.) is simpler but may tie ACs too much, method (2.) is harder; communications between coordinator and ACs must be fluid, changes notified, etc.

# Conclusions

- Analysis Centres need to fill in a new processing summary and agree to common standards.
- Station Data varies greatly over time, some coordination is needed to ensure constituent groups' needs are covered, and maximum benefit obtained.
- Open points need to be finalised:
  - » Discussion session to start now

## Discussion Points

- **Handling discontinuities**; common treatment method?  
common list for ACs? Note discontinuities in SNX?
- **SINEX files**; daily or weekly?
- **Trop issues**: Mapping function (NMF/GMF)? Combination?
- **Clock files**; 300 sec / 30 sec ?  
Some ACs produce 30sec clock files for IGS  
Would it be useful if we all did this?
- **Orbit Overlap**; users complain of “unfinished” days ....  
Need to concat files,  
This is an IGS-wide issue, beyond REPR
- **Station Coordination**; “pick a list” or “detailed coordination”, which do ACs think will work better?

Some of these points should be closed in this public forum,  
some may need offline iterations with the ACs.