

ISTI all hands call 1/8/14

13Z (8EST, 13 GMT, 14 CET)

Documents circulated in advance:

1. Overarching initiative progress report (draft)
2. Working group progress reports (2 docs)
3. Proposed terms of reference revisions for all ISTI groups (drafts) (4 docs)

Chairing: Peter Thorne

Present on call: Peter Thorne, Jared Rennie, Jay Lawrimore, Victor Venema, Xiaolan Wang, Steven Worley, Blair Trewin, Michael de Podesta, Andrea Merlone, Enric Aguilar, Ian Jolliffe, Rachel Warren, Lucie Vincent, Akiyo Yatagai, Robert Dunn, Stefan Bronimann, Antonio Possolo, Dave Lister, Robert Lund, Waldenio de Almedia, Colin Morice

Apologies in advance: Kate Willett, Rob Allan, Richard Chandler, John Christy, Juerg Luterbacher, Albert Mhanda, Matt Menne, Albert Klein Tank

Actions summary

ACTION: Jay and group to discuss whether possible for someone to attend and give talk at Xiaolan's EGU session

ACTION: Jay and Databank WG to formulate data merge task team terms of reference.

ACTION: Peter to ensure that final annual report redrafted, reviewed and resubmitted by Jan 31st.

ACTION: Peter to follow up with Tom Peterson on how ISTI can input to CCI congress.

ACTION: Peter and WG chairs ensure 3-5 abstract submissions to MMC by end of February deadline.

ACTION: Steering committee to discuss further on next call the need, financial support options and timing of a next ISTI meeting and whether could be collocated with e.g. MMC meeting or some other appropriate meeting.

1. Updates on activities since last all hands call in June 2013

1.1. Steering committee

Following the meeting of GCOS AOPC a letter was drafted with GCOS secretariat and WMO OBS department colleagues and sent under cover of the WMO secretary general to all National Met Services Permanent Representatives. This requested that they review the databank holdings and provide feedback, any additional data, and also any info on parallel measurement activities. We know that a number of NMSs have been discussing this but to date at current knowledge no formal responses have arrived. See <http://surfacetemperatures.blogspot.no/2013/10/request-for-support-sent-from-world.html> for more info.

A subset of ISTI participants put together a proposal for a summer workshop with SAMSI (www.samsi.info/). This was selected. The workshop will occur in July 2014 and be held in Boulder and co-sponsored by Doug Nychka's group. The meeting will be held in the lab up on the hill. At this time invites are almost ready to go to key invitees and we are needing to start the design of the workshop program. The workshop aim is to explore novel techniques to the homogenization of the station series. It will make use of at least the databank v1 release and the open error worlds from the benchmarks. This, obviously, places a firm deadline upon the completion of these aspects. It is envisaged that the workshop will be largely practically based. In addition to a required report for SAMSI consideration will be given to creation of an article.

The organisers will be invited together with a subset of the people who wrote letters of support. Afterwards there will be an open call, where people can apply. The room limits the meeting to 44 persons.

Publicity:

- Kate Willett gave two talks at IMSC in S. Korea Rachel's talk also related to ISTI
- There was a poster at TEMPMEKO which was prepared by Michael de Podesta and presented by Andrea and Stephanie Bell (NPL). It helped motivating the thermal metrology community in climate issues. There was a lot of interest in it. More interaction with metrologists is starting to accrue with time. 5 to 6 posters on environmental issues, ISTI poster was well attended.
- Peter Thorne included ISTI in invited talk at Royal Society event in October

- Peter Thorne gave talks at event at SAMSI and a stats and climate workshop in Oslo
- Kate Willett gave a talk at Reading University
- Kate Willett gave a talk at the Met Office
- Enric Aguilar made presentations including ISTI publicity at NORDHOM seminar (Norrköping, Sweden) and CRC-SAS Workshop (Paraguay). In this later one, the Met Services in the region are aware of the WMO letter and might be interested to contribute. Contact sent to Jay this morning. Potential for parallel measurements.
- Kate Willett has been invited to give a talk at Imperial University in March
- Kate Willett has been invited to give a talk at Edinburgh University in Spring
- Jared Rennie presented a poster at AGU Fall Meeting in San Francisco in Dec 2013. Lots of interest, nothing on the terms of new data. Many people interested in using it as a validation for satellite data.
- Peter Thorne will give a talk at AMS annual meeting in February
- There may be attendance at EGU by at least one poster / talk. XW: Kate Willett has been invited to give a talk at the EGU2014 Data Homogenization Session. Jay L. or Matt Menne has also been invited but has not confirmed.

Deadline for EGU talks is Jan 16th, but invited can be submitted up to a week later.

Jay / Matt will follow up with Xiaolan soon.

ACTION: Jay and group to discuss whether possible for someone to attend and give talk at Xiaolan's EGU session

Both Peter and Kate have various presentations and poster versions available. All members of all groups are strongly encouraged to submit abstracts to relevant meetings to which they will be going to spread the word.

The Earthtemp white paper got published. This is broader than ISTI, which appropriately places ISTI in a context of all aspects of surface temperatures. The paper is at <http://www.geosci-instrum-method-data-syst.net/2/305/2013/gi-2-305-2013.html> . Several members of the steering committee are co-authors on this piece.

1.2. Databank Working Group

There has been a delay in getting v1 of the Databank release - Delay is associated with new requirements at NCDC for additional configuration management and process review. Code review has been completed and

modifications to merge code being made. Has delayed the ability to push it out.

Expect nothing to change with structure of databank merge as a result of these process reviews.

PT: Do you yet have any clarity on when this process might be complete? If it is still some time then can a copy of v1 be shared with benchmarking so that they can start to build their clean worlds which require to mimic the spatio-temporal sampling and statistics of the real-world data?

JR: The requirements are near completion, however still needs to be approved by NCDC, I see approval for release sometime in February/March. Once requirements are met, I would like to update sources and re-run the merges so that the latest data is available (ie incorporate all of 2013). Can provide copy when benchmarking is ready for it.

Beta4 is publicly available and version 1 is internal only until cleared. Compared to beta 4 the version 1 release has updated sources and updated blacklist – no other changes. Just under 32K (31999) stations – much better coverage – some plots on website – similar to before.

Databank journal article was accepted for publication (Geoscience Data Journal). Will not release until v1 out.

When version 1 is ready for release members of the WG be given opportunity to provide public/media information on the databank and ISTI effort, possibly through national media.

WG Terms of Reference being updated: Recommendation for designation of a data merge team -- largely those who have been involved in the merge development to date.

PT: Suggest discuss this potential new task team under item 3.2

1 to 2-year goals:

- Develop a metadata collection strategy to pursue metadata holdings.
- BT: quite a bit of work is happening in WMO at moment to develop structure for metadata databases - will follow up.
- Work with ACRE / ICOADS etc. to investigate potential extension of IMMA format to land meteorological data
 - Implement NRT and period of record updates to the databank and document how these are done

- Develop formatting structure for storing parallel measurements and begin collection of parallel measurements
- Enhance data collections in data sparse areas, principally Africa and S. America. (Work with ACRE and EarthTemp Network)
- Create plan for developing and operating a Daily databank
- Begin extension of databank to multi-elemental holdings by creating infrastructure for precipitation and/or snow depth

Waldenio: We have more data now that can be provided. Issue of paper record only availability in some other holdings remains an issue in S. American data.

JL: We have additional data, thankyou. We will incorporate this into the merge later.

Victor: Does code review extend to external code processes?

JL: No, solely necessary because this is an NCDC process. If the databank area hosts benchmarks / level 4/5 products their underlying software will not need such approval.

Albert Klein Tank (submission post-call): there continues to be some progress in the implementation of the regional data/indices portals for SE Asia, W Africa and Latin America (each modelled after the ECA&D website for Europe); Jared is harvesting the newly available daily temperature data at regular intervals (I hope).

PT forwarded this info to Jay and Jared for consideration and appropriate action.

1.2.1. Data rescue task team

Following several abortive attempts to hold a call a quorate call was held in December 2013. This call decided that there was value to retaining this activity and efforts will be made to ensure better upkeep on communications in future. The substantive issues faced in data rescue remain stubbornly static: resources, coordination and data policy. Individual efforts continue to chip away at the problem and it is recognized that ISTI has to be a partner in the larger whole. Finding funding to stand up a substantive crowdsourcing portal with CSA (zooniverse.org) or a similar partner remains a priority.

Albert Klein Tank (submission post-call): we had a fairly lengthy discussion on improving the international coordination of data rescue and digitization activities (in particular considering global and regional reanalysis usage) during the ACRE meeting in Portugal last November. I read what you wrote about this topic on the ISTI etherpad. Because the regional ECA&D portals

are already included explicitly in the GFCS implementation plan, I was tasked to explore the possibilities to have the data rescue and digitization topic also included explicitly in the GFCS implementation plan. This would make funding of activities using GFCS funds more easy. Unfortunately, the mechanism for this is not very (or not at all) transparent at the moment. The intention for a first step is to get this topic highlighted and mentioned in the material prepared for approval at the next CCI.

1.3 Benchmarking and assessment working group

We've been meeting regularly and working hard on all three aspects of the benchmarking.

A concepts paper is very close to being ready for submission for publication. This outlines the purpose and logistics of benchmarking homogenisation algorithms for ISTI. This will be submitted to the Geoscientific Instrumentation Methods and Data Systems: <http://www.geoscientific-instrumentation-methods-and-data-systems.net/> (open access) after internal review at some institutions.

Terms of Reference and Progress report completed and signed off by the Benchmarking working group.

Team Creation:

Work ongoing with code improvements and rolling out the method to larger regions. There is still a fair way to go to get this working on the global (31999 station) scale. Paper half written explaining the method.

Team Corruption:

Blind error worlds now defined with distributions and probability structures for applying abrupt and gradual errors of varying shapes, sizes and frequencies.

- B1 Best guess for the west everywhere
 - B2 B1+ no spatially correlated CPs (Change Points)
 - B3 B1+more/smaller random CPs
 - B4 B1+fewer/larger random CPs
- Physical Inhomogeneities
- B5 Best guess everywhere
 - B6 B5+more/smaller bias CPs
 - B7 B5+different background climate
 - B8 B5+ national/exotic CPs###
 - B9 B5+seasonal: Auchmann & Bronnimann
 - B10 B5+complex seasonal

Open error worlds now defined with distributions and probability structures for applying abrupt and gradual errors of varying shapes, sizes and frequencies. Further ideas still welcome

O1 No inhomogeneities

O2 Only large CPs

O3 No seasonal cycle

Team Validation:

Levels for assessment are defined:

Level 1: Climate recovery - how similar the homogenised error world is to the original clean world in terms of trends, means, variance

Level 2: Detection ability - hit rate/false alarm rate

Level 3: Adjustment ability - weighted hit rate/false alarm rate, characteristic of the inhomogeneities (size, seasonal cycle, etc.)

Level 4: Realism of the benchmark (comparing detected inhomogeneities in artificial worlds and real observed data)

Overview:

We're struggling to keep on top of deadlines given the heavy workload of decisions and method/code building but are aiming for release of at least one blind world by July 2014 in time for the SAMSI workshop.

IJ: Rachel Warren's PhD looking at daily data is moving forward nicely. Very much linked to ISTI Benchmarking but using a somewhat different approach in some parts.

2. Sign off of working group progress reports

Please raise any substantive points you have here. No points raised will imply acceptance and formal sign off and they will then be posted online.

Lucie Vincent noted an error in the databank WG report title that has been corrected 2/1/14

Signed off unanimously

3. Sign off of revised terms of reference documents

Please raise any substantive points you have here. No points raised will imply acceptance and formal sign off and they will then be posted online.

3.1 Steering committee

Adopted

3.2 Databank working group

Databank working group ToR were amended following input from Steve Worley and recirculated 1/7/13

Add Colin Morice to terms of reference.

Copy edited version approved with reference to a data merge task team agreed by Databank WG chair without objections.

ACTION: Jay and Databank WG to formulate data merge task team terms of reference.

The data rescue task team document can be used as a pro forma.

Was agreed it was appropriate for WG to adopt terms of reference for data merge task team once drafted.

3.3 Benchmarking and assessment working group

Adopted

3.4 Data rescue task team

Adopted

4. Discussion of annual progress report draft

This report needs to be completed and filed by Jan 31st. The document circulated Jan 2nd constitutes a draft that has yet to be carefully vetted and edited. Comments are welcome on the etherpad or by email in advance and also will be discussed on the call. Comments would be welcome upon:

1. Whether we are missing any substantive achievements

RC: Progress report, p2, para 5 ("Several papers ..."): insert "at the 12th International Meeting on Statistical Climatology in Jeju, South Korea," after "North Carolina".

KW: Add in the other talks: IMSC (invited) IJ: 12IMSC presentations now available

from http://imsc.pacificclimate.org/proceedings/12IMSC_abstracts.pdf

KW: New members joined the benchmarking wg following the IMSC conference and the NCDC workshop.

KW: Mention that the benchmark group have not met prior deadlines due to difficulties in tackling the problem but continue to make progress.

2. Whether there are activities planned in 2014 not currently captured in the plan

KW Talks at Imperial College and Edinburgh University

VV: Talk on the benchmarking at the homogenisation workshop in Budapest.

PT: Please provide a month / date this will happen. (12-16 May

2014) <http://variable-variability.blogspot.com/2013/12/announcement-of-8th-seminar-for.html>

BT: WMO Commission for Climatology meets July 2014. Presumably this will have a role in any formal resolutions to be put to WMO Congress (due May/June 2015).

ACTION: Peter to follow up with Tom Peterson on how ISTI can input to CCI congress.

3. As to the realism of the planned activities and timelines

KW; Benchmark position paper task - to be submitted to Geoscientific Instrumentation Methods and Data Systems

KW: Timelines ok for benchmarking although we are a little delayed on the January deadlines already I think but these are as they stand in the benchmarking Progress report.

From here to publication: Peter will redraft based upon the discussion points raised, circulate for comment to WG chairs and then after further revision steering committee for final approval. Foresee no issues with meeting 31st deadline.

ACTION: Peter to ensure that final annual report redrafted, reviewed and resubmitted by Jan 31st.

5. Discussion of planned cross-ISTI activities in 2014

5.1 MMC conference Sept 2014, Slovenia

<http://www.mmc-2014.org/>

This workshop aims to bring metrologists and climate scientists together. As such this is an opportunity to engage the European metrological community. Abstracts are due end of February. We should consider on the call appropriate representation and ensure we are raising the requisite number of

abstracts etc. Andrea Merlone is workshop lead and hopefully can provide further guidance.

Location has experience hosting large events. Manufacturers have shown interest.

ISTI could have a sub-session at this if we wished. Try to get about 3 or more ISTI talks.

Talks need submission by end of Feb.

ACTION: Peter and WG chairs ensure 3-5 abstract submissions to MMC by end of February deadline.

Michael will be attending.

KW: Sounds good - hoping that Robert Dunn may be able to attend, or myself. It won't be both and depends on UKMO funding which is very tight.

5.2 SAMSI workshop July 2014, Boulder

As discussed above this workshop will happen in July 2014 and hopefully gain some additional traction on getting some new methods developed and participating in the homogenisation of the databank holdings. This will likely be a substantive focus of 2014 activities.

5.3 Need for getting a ISTI 'workshop'?

Andrea Merlone raised the potential for lobbying for an in person meeting of ISTI. It has now been almost four years since the kick off meeting in Exeter. Is it time to seek support for a general meeting of ISTI? Who could host and what support for participation could be reasonably raised? How many may be able to self fund in the current economic climate to minimize costs?

KW: I will investigate chance of hosting at UKMO but not very confident.

EA: If UKMO is not possible, I can check with Manola and Javier if we can organize it here in Spain.

VV: Best to wait til first benchmarking cycle is completed? But could meet before as well, only preferably not a general meeting just before such a benchmarking meeting

MdP: Definitely at some point would be good to meet again. Keeps momentum.

AM: Idea was to try to take advantage of existing meeting - e.g. MMC.

XW: well advanced announcement of the meeting date is important for us. It takes some time for us to get travel plan approval (preferably 12 months+ as sometimes funding bids have to be put in before start of financial year).

BT: support in principle, but as always biggest challenge will be finding the money.

ACTION: Steering committee to discuss further on next call the need, financial support options and timing of a next ISTI meeting and whether could be collocated with e.g. MMC meeting or some other appropriate meeting.

VV: Would that call be before the deadline of MMC? For the questions whether we want to combine, it is also important to know how long we would like the ISTI meeting to be.

5.4 Earthtemp meeting June 2014, Germany

This year Earthtemp's meeting has an African focus. Any suggestions I (PT) can funnel back to organizers. See www.earthtemp.net for more details.

6. Any Other Business

By email in advance:

Richard Chandler: Last summer I indicated to you that UCL was involved in a bid to NERC for the development of national "Big Data" capability, and that I was angling to see whether there was an opportunity for some resource to be made available to ISTI here. We recently learned that the bid was successful, which is good; but due to the funding environment in the UK at present NERC are insisting that the work is completed between 1st April 2014 and 31st March 2015. Not much time, therefore; but the bid leader **is** interested in ISTI, and we'll be having a meeting at UCL in the next few weeks to figure out what we want to do(!). It seems to me that there could be an opportunity here to (a) mirror the databank (b) think about setting up a data portal / user support. I can't push this **too** hard, but I'll do what I can. Message to steering committee therefore is: watch this space. I'm afraid I can't give you much in the way of additional details here, except that the funding came under the "Environmental Big Data Capital Call" described (very briefly) at <http://www.nerc.ac.uk/research/capability/environmental.asp>.

PT: Propose UK based members / those with UK links have an offline discussion with Richard on this. Kate can we use your facility?

KW: Call numbers? Yes.

Akiyo Yatagi:

With this counterpart, we had a session at AGU last month, and will have a session at coming EGU (May) .

Further, in coming AOGS (July/August in Japan), I involved Japanese hydrologist so that researchers who recognize me and the hydrologist can easily submit an abstract.

Are you or somebody of ISTI representatives coming to EGU or AOGS? I hope somebody would make a presentation on ISTI.

1) EGU deadline is 16 January 2014, 13:00 CET

data management systems

<http://meetingorganizer.copernicus.org/egu2014/sessionprogramme>

* I'm a co-convener, and am not sure if I can go to Vienna.

First Author Rule: Regarding the oral preference, you are allowed as first author to submit either ONE regular abstract plus ONE abstract solicited by a convener, or TWO solicited abstracts. Each further abstract has to be submitted with a poster preference. If you submit to a session belonging to the programme group EOS, you are allowed as first author to submit ONE more abstract with an oral preference (THREE in total).

Enric Aguilar: Xiaolan Wang is convener and myself co-convener of the session: CL6.2

"Climate Data Bias-Correction and Homogenization and Climate Trends and Variability Assessment". Of course, the works from the ISTI group are welcome.

AY: I may submit one to your session.

People planning to attend EGU should try to submit something to all 3 sessions (surface temperatures, bias correction, data management activities)

Who is planning to attend? Are people planning to submit to each?

XW: Kate Wilett, XW and Enric Aguilar plan to attend session CL6.2

JR: Will try to attend EGU. If Jay and Matt cannot attend, would be willing to present working group activities XW: good to know that. Hope to see you there.

2) AOGS Submission Closes: 11 Feb 2014

<http://www.asiaoceania.org/aogs2014/public.asp?page=mars2/confSessionList.asp>

(IG32-ST31-AS53) Geoscience Databases -- development, assessment and interoperability

* I am the main convener of this session.

TWO abstracts is the maximum limit for each submitting author
I intended to make a title for "Atmospheric Databases", but other conveners and my current community insisted to use this word. But you may see that main key word is "atmospheric science" in the session details.
I and one of the co-chairs (Dr. Higuchi, hydrologist) are working for developing database and release it.

PT: Propose Jared consider viability of attending AOGS which may be good opportunity to increase reach into Asia Pacific research community to increase visibility and perhaps shake out some additional data holdings contributions for us.

JR: Will look into it.

AY: Thanks!

Akiyo could present on our behalf.

3) News from EURAMET. A task Group on "Metrology for Environment" is being organized and will be formed by 50% metrologists and 50% climatologists and researchers/operators in environmental and meteorological issues. It is expected a kick off meeting in 2014. ToR have been defined and the main scope is to address EURAMET in funding projects and launching calls on topics about Environmental application of metrology. Temperature, radiation, chemistry at first.

News from MeteoMet.

a) MeteoMet2 passed the evaluation process and is funded! Will start on October 2014 just after MeteoMet end. 6 years funding.

b) The software for translating temperatures recorded with thermometers from 1900 up to now, taking into account the different temperature scales, and correcting the differences to report all the values to ITS90 values is now available.

PT: How can we access this?

AM: we will provide the swf within a couple of weeks, after test and bugs correction.

VV: What is ITS90?

AM: International Temperature Scale

http://en.wikipedia.org/wiki/International_Temperature_Scale_of_1990

Is a scale of temperature for calibration based upon a current agreed calibration standard.

Future meetings

We will aim to have another all hands meeting in approx. 6 months time

All groups should aim to convene at least once in the interim.