

GIFS/TIGGE WG 5<sup>th</sup> MEETING ACTION ITEMS  
Mar 14, 2008

- 1 Information on generation procedures for TIGGE global ensemble metadata:
  - a) Agree on information content - Z. T. coordinates with Ken Mylne, circulate to WG members before it is finalized (K.Mylne, Z.Toth, Apr. 15,)
  - b) Study WIS-compliance aspects and related costs, study xml; set up xml template if appropriate, recommend other format otherwise (B. Ebert, W. Almeida, possibly with some help from ECMWF, Apr 30)
  - c) Producing centers prepare info sheet in table format (marked with implementation date), post this on their web site, send url info to TIGGE webmaster(s) (All producing centers, May 31,)
  - d) TIGGE web master(s) create links to producing center url's (TIGGE webmaster(s), June 30)
  - e) Producing centers add new table every time their system is changed; old tables are to be kept on web for reference (All producing centers, ongoing)
- 2 TIGGE-LAM subgroup to strengthen links with THORPEX Regional Committees (Sep 2008, T. Paccagnella). TIGGE-LAM group to conduct a precise survey of LAM-EPS groups interested in IC/BC in pressure levels in real-time (T.Paccagnella, Sep 2008)
- 3 Regarding EC0-1 from THORPEX EC Febr. 7, 2008 meeting: TIGGE / GIFS WG finds the representation of THORPEX WGs and Regional Committees insufficient with only one co-chair from all WGs and RCs on the EC. This may not allow efficient information exchange between ICSC meeting. A co-chair from each WG and RC would provide much better representation. Note that most EC business could possibly be done via e-mail (co-chairs of TIGGE/GIFS WG will report on this to ICSC, Nov 2008)
- 4 Barbara Brown and Tom Hamill to be moved to SERA & DAOS WGs as recommended by March 2007 TIGGE / GIFS WG meeting (co-chairs report to ICSC, Nov 2008). L. Wilson to represent TIGGE at SERA meetings (co-chairs, IPO)
- 5 Even though SERA WG assumed wider role, we request that for proper collaboration with THORPEX WG, their activities, membership, etc be listed as before under THORPEX in reports etc (ZT report to IPO, Mar. 2008)
- 6 Collect information on usage of TIGGE Phase-1 archive from the three archive centers, share info with WG members (Steve Worley, Sep 2008)
- 7 Advertise TIGGE web forum accessible from NCAR archive site, add links to the forum from other TIGGE access sites (Steve Worley, May 2008)

- 8 Invite a WIS expert to next TIGGE / GIFS WG meeting (co-chairs, IPO, Sep 2008)
- 9 Consider addition of new records into TIGGE Phase-1 data exchange/archive (in format similar to existing variables) depending on more concrete requests from TIGGE-LAM subgroup and PDP WG. For example NWP experiments need more complete information on IC (on continual basis; JMA request, MUMMA-type research) and BC (for preselected periods, ~30 days per year, TIGGE-LAM support) facilitating ensemble experiments (Y. Takeuchi / C. Bishop consult with PDP WG, T. Paccagnella consult with TIGGE-LAM subgroup to develop list of added variables – May 31; producing centers / archive centers consider including additional variables, not to exceed a total of 10% increase in data volume per year – Nov 2008).
- 10 GRIB2 precip encoding/decoding problem noted by JMA; detailed description of problem to be sent to archive centers (Y. Takeuchi, Apr 2008)
- 11 ECMWF web page expanded with list of TIGGE-related publications (P. Bougeault, May 31)
- 12 Explore what observational data readily accessible through NCAR, NCDC/NOAA and possibly other web sites may be relevant for TIGGE verification efforts; add useful information to TIGGE-related web sites (Laurie Wilson, June 2008)
- 13 JMA to continue and expand its WMO-sponsored verification activities following recommendations by Ensemble Expert Team. Final verification of selected upper level grids against each center's own analysis to be provided by each producing center to JMA (All producing centers, ongoing); missing statistics to be computed and posted by JMA (Y. Takeuchi, Jul 2008). JMA to consider verification of a combined, 10-center TIGGE ensemble (Y. Takeuchi, Oct 08) (verifying analysis to be selected after consultation with experts). Verifying analysis for, and verification of precipitation ensembles to be considered later
- 14 Encourage THORPEX Regional Committees & RSMCs in use and user specific verification of TIGGE data against observations or other relevant data (co-chairs, L. Wilson, & IPO, May 2008)
- 15 Prepare draft letter to be sent by WWRP to JMA Intl Affairs Office & KMA (and possibly other producing centers if needed) with request to provide TC data in CXML format on ftp site for research applications during TPARC. Access can be limited to registered users. Request consideration of continued access to data after T-PARC, under conditions defined by data providers (Z. Toth and IPO, April 2008)
- 16 Contact colleagues at CMA (Shanghai) engaged with TC forecasting to explore their interest and willingness to contribute to CXML TC data exchange (J. Gong, May 2008)
- 17 Proposed CXML format and content for real time exchange of TC (and later ETC) accepted by WG with minor changes. CMA, JMA, KMA,

ECMWF, CMC (through NCEP), UKMETOFFICE, and NCEP expressed an interest and readiness to make files with TC info in cxml format available through their individual ftp sites in real time by July 2008 for TPARC (Aug-Sep 08, Jan-Mar 09), and with 48-hr delay if desired by any producing center, beyond TPARC Tracking algorithms / software voluntarily shared among centers (7 contributing centers, July 2008).. BOM & METEOFRENCE to explore possibility to contribute later.

- 18 Producing centers to provide ftp site and access info to B. Ebert for inclusion on CXML T-PARC & TIGGE web sites (Contributing centers, June 2008)
- 19 CXML proposal to be augmented by content & name of files to be made available by producing centers (Proposal by B. Ebert, 31 March, final version after consultation with all producing and archive centers, 15 April)
- 20 CPTC expressed an interest in tracking subtropical and extratropical lows, explores use of cxml format, report on experience to cxml team, and in its ensemble to be processed by other parties for TC tracks (P. Silva Dias, B. Ebert, Sep 08)
- 21 NCAR, and possibly ECMWF could create cxml archive, contingent on appropriate file naming and data transmission protocols. Access / interrogation methods to archived data unclear until further specifications are given. Archiving of TC information to be explored, either at phase-1 archive center(s), and/or in distributed phase-2 framework, in conjunction with focal group addressing phase-2 archiving issues (B. Ebert, Sep 2008)
- 22 WG discussed Phase-2 / GIFS draft plan, including concept of real time data exchange (Phase-2) and product generation (GIFS) as new elements in TIGGE / GIFS, and agreed with general structure of plan. Content needs to be revised; revisions based on specific recommendations (eg, NCAR conditions to link their archive with future common user web interface; interactivity) to be included before document is presented to IPO & ICSC. Archiving to be discussed further at Sep 08 meeting. (Revised plan circulated to WG – Apr 30; WG feedback, May 31; Final version, June 30)
- 23 WG identified archiving of ensemble data and derived products during Phase-2 and GIFS as an area that will need further consideration and discussion. Options to consider include:

For ensemble forecast data:

- a) Continue Phase-1 archive system (3 central locations, with identical copies of data. NCAR & ECMWF expressed a willingness and interest to continue with current archive system
- b) Distributed archiving
  - i) Data archived by 3 centers partitioned, avoiding duplication (eg, each center collects and holds data from 3-4 different producing centers)

- ii) Data archived by producing centers (Some expressed interest)
- iii) Combination of (i) & (ii), ie, some centers archive their own data, while others send their data to central archives

For derived products – first assess what needs to be archived, then:

- a) Archive at producing centers
- b) Archive at RSMCs who use the data
- c) Archive at data distribution centers (GIS/C)
- d) Archive at TIGGE Phase-1 archive centers
- e) Combination of above, ie, find most suitable solution for each type of data

Prepare for discussion of archiving issues for duration of Phase-2 & GIFS at next WG meeting (Phase-2 / GIFS Planning sub-group to prepare discussion material for Sept WG meeting, Zoltan Toth & sub-group members, Sept 2008; WG members to report about their center's archiving interest/willingness, Sept 2008)

- 24 Continue current archiving practices at 3 centers until new arrangements are developed and accepted for data archiving,. (Reps from archiving centers, ongoing)
- 25 For detailed planning, start two focus groups for initial Phase-2 & GIFS planning with volunteers from WG members, technical experts from producing & archive centers, and invited experts on WIS etc (co-chairs, Apr 30):
  - a) Real time data exchange, product generation, web interface, archiving issues
  - b) Tool box (shared development and use of algorithms/software – Mohan Ramamurthy)
- 26 Focus groups report to full WG (Sep 08 WG meeting, focus group leaders)
- 27 Start exploring real time exchange of gridded precipitation data as prototype for Phase-2 real time data exchange and GIFS product generation; coordinate with real time data exchange focal group (L. Wilson, P. Dias, Sep 2008)
- 28 After discussion, WG found YOTC data request lacks some details. Also, it is not clear how wide the potential user base of the new data would be. Further, it was not clear if for the studies foreseen, whether ensemble data would be needed or data from a single high resolution integration may be best. Also, since the generation of the data may require significant resources, it may be preferable to derive the data from special off-line integrations, as opposed to operational forecasts. Overall, the WG felt the request may be better addressed by WGNE, and suggest YOTC contact the WGNE group. (Z. Toth, March 08)
- 29 The WG briefly discussed the issue of timeliness of data access from TIGGE Phase-1 archives during demonstration projects like T-PARC. It was noted that though the normal 2-day delay for data access is waived for such periods, there is an unavoidable delay of around 36 hrs due to the transmission procedures used to transfer large amounts

- of data on a regular basis from the 10 producing centers to the 3 archive centers. The WG encouraged interested T-PARC participants to take advantage of the TC track/intensity information that the producing centers plan to make available in real time during T-PARC. Once Phase-2 of TIGGE is developed, real time access to ensemble data will be feasible (Z. Toth, info item for IPO, March 2008)
- 30 WG agrees to organize TIGGE workshop (or TIGGE sessions) as part of Science Symposium in March 2009. Request IPO to position TIGGE sessions in middle of meeting. Example: Tue pm: TIGGE research results (jointly organized with PDP); Wedn morning: overview of TIGGE Phase 1 (~1 hr), followed by tutorial on 3 archive centers (in poster area with 3 PCs, 1 hr), then user feedback on phase-1 (3 hrs); Phase-2 & GIFS plan overview, followed by discussions (3 hrs in afternoon); Thurs am: Sera applications (R. Swinbank, Y. Takeuchi, Laurie Wilson volunteered as members of organizing group, along with K. Mylne from Ensemble ET CB from PDP - ongoing; JMA appointed Mio Matsueda as member of the organizing group shortly after the meeting. The co-chairs will appoint a leader for the organizing group)
- 31 Short PR paper on TIGGE Phase-1 to be published in EOS, after NCAR upgrades to its archive in ~June (P. Bougeault, July 08)
- 32 Longer paper with some science results to be published in BAMS (P. Bougeault, Dec 08)
- 33 Presentations at meetings on TIGGE; encourage science results (PDP, SERA, etc):
- a) AMS Annual meeting Feb. 08, New Orleans (Y. Zhu)
  - b) EGU, Vienna, Apr 08, Z. Toth
  - c) AGU, Fort Lauderdale, May 08, Glenn Rutledge
  - d) EMS, Oct 08, P. Bougeault
  - e) Asian TIGGE / THORPEX science workshop J. Gong, Oct 08
  - f) AMS 09, S. Worley
  - g) Brazil, Apr 09, control theory / TIGGE. P. Dias
  - h) IAMAS, summer 09 R. Swinbank
- 34 Suggest to other groups the addition of links on their web pages to TIGGE archive sites (B. Ebert, June 08)
- 35 TIGGE / GIFS WG wishes to participate at Geneva, Sept 22- meeting, request at least 1-2 day separate meeting (co-chairs & IPO, Mar 08)
- 36 TIGGE-LAM sub-group meeting to be organized for Geneva Sep 22-week, 1-2 days, with opportunity for sub-group to join some of TIGGE / GIFS WG discussions (T. Paccagnella, co-chairs, IPO, Mar 08)
- 37 Invite GEO user committees to co-organize and attend THORPEX Symposium and TIGGE workshop/sessions (L. Wilson, IPO, Apr 08, after time/location finalized)