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Creating surface temperature datasets to meet 21st Century challenges

Met Office Hadley Centre, Exeter, UK

7th-9th September 2010

White papers background

Each white paper has been prepared in a matter of a few weeks by a small set of experts who were pre-defined by the International Organising Committee to represent a broad range of expert backgrounds and perspectives. We are very grateful to these authors for giving their time so willingly to this task at such short notice. They are not intended to constitute publication quality pieces – a process that would naturally take somewhat longer to achieve.

The white papers have been written to raise the big ticket items that require further consideration for the successful implementation of a holistic project that encompasses all aspects from data recovery through analysis and delivery to end users. They provide a framework for undertaking the breakout and plenary discussions at the workshop. The IOC felt strongly that starting from a blank sheet of paper would not be conducive to agreement in a relatively short meeting.

It is important to stress that the white papers are very definitely not meant to be interpreted as providing a definitive plan. There are two stages of review that will inform the finally agreed meeting outcome:

1. The white papers have been made publicly available for a comment period through a moderated blog.
2. At the meeting the approx. 75 experts in attendance will discuss and finesse plans both in breakout groups and in plenary. Stringent efforts will be made to ensure that public comments are taken into account to the extent possible.

33 **Creating surface temperature datasets to meet 21st**
34 **Century challenges**

35 ***Ongoing governance of the process***

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47 Remit:

48 1. How this process should be governed;

49 2. The need for and frequency of meetings and their purpose;

50 3. Funding support;

51 4. Mechanisms for periodic reporting and assessment as to whether the project is being
52 successful and should be continued;

53 5. How to ensure regular updates and truly global participation in the process through e.g.
54 regional workshops.

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56 At the outset it is useful to outline exactly what we are trying to achieve through this
57 discussion of how the ongoing effort to create a new suite of surface temperature datasets will
58 be governed.

59 The dictionary definition of governance is 'the action or manner of governing a state ,
60 organization, etc' and in this context describes the mechanisms by which all stakeholders can
61 contribute to decision making and thus have full confidence in the ongoing process of dataset
62 development and dissemination.

63 Any governance mechanisms chosen should satisfy the following overarching prerequisites:

64 Stakeholder Engagement

65 The success of this endeavour hinges in no small part on the ability for stakeholders to be
66 fully consulted and considered during the decision making process. These key stakeholders
67 include amongst others :

68 Scientists (including those from outside the climate science sphere such as metrologists and
69 statisticians) – who can help formulate what is possible

70 Users – who will ultimately make use of the information generated

71 Data Providers – the National Meteorological Services and other institutions that hold the
72 underlying data records

73 Efficiency

74 The international effort to develop a new dataset will aim to capitalise on existing work that
75 will be carried out as a business as usual activity in the institutions responsible for
76 implementing particular elements. In the same way the governance mechanism should aim to
77 make the best use of existing institutions, international organisations and collaborations.

78 Flexibility

79 There must be sufficient agility within whichever governance mechanism is chosen to respond
80 quickly to emerging needs. Within this there is a need for the appropriate delegation to those
81 empowered to act on behalf of the stakeholders identified above.

82 ***Ownership of the process***

83 The initiative has been endorsed by WMO CCI, WCRP and GCOS, therefore the top-level
84 ownership of the process should lie with the executive bodies of these bodies, i.e., the CCI
85 management group, the Joint Scientific Committee of the WCRP and the Steering Committee
86 of GCOS.

87 Although the executive bodies of these institutions should be kept well informed of progress, a
88 Steering Committee could be formed that answers to these bodies and would be composed of
89 the leaders of the various working groups responsible for delivering particular elements of the
90 dataset. Committee members should include those working on benchmarking and
91 interpolation, the databank construction and maintenance, and various others (“evangelists” –
92 see below) who are seen as integral to the over-arching success of the effort. This steering
93 committee should have sufficient designated authority to undertake reasonable management
94 activities (e.g., be able to set up tasks, additional ad-hoc working groups etc.) as it considers
95 necessary, i.e., without needing to undergo laborious approval procedures.

96 ***Meetings***

97 In order to satisfy the requirements for efficiency, we must exploit synergies with existing
98 expert groups within all related bodies for example CCI Expert Teams and the CBS Lead
99 Centres on GCOS who monitor, and act upon, the flow of climatological data from RBCN and
100 GSN stations. These opportunities should be used for the purpose of implementing the work
101 programme coming out of the September workshop.
102 The use of virtual meetings should be used wherever possible..

103 ***Funding***

104 We must recognise that the pace of success for this endeavour will be influenced heavily by
105 two factors: available funding and a willingness on the part of governments to release their
106 data.
107 In terms of the first factor we could select a small number of appropriate people to sit on the
108 core steering committee and act as ‘project evangelists’ to proactively engage with funding
109 bodies such as the European Commission, the National Science Foundation, google.org,
110 industry and other bodies to raise the profile of the endeavour and gain access to funding.
111 Engagement with GEO should also be pursued as many governments have already signed
112 up to the GEO Implementation Plan which includes at least two related tasks. GEO is also a
113 well known brand and carries weight in some parts of the political sphere.

114 ***Reporting and Assessment of Progress***

115 Monitoring and assessment of progress should be an ongoing part of the work with a single
116 common formal report taking place on an annual basis to WMO, WCRP and GCOS (and
117 possibly BIPM and TIES). Progress should be measured against the workplan and decisions
118 made on the future direction to be taken.
119 Progress reports should be generated and maintained by the lead individual responsible for a
120 particular part of the workplan and the virtual meetings of the Steering Committee should
121 monitor progress as a standing part of their agenda.
122 The opportunity to report on progress and plans at conferences and through the scientific
123 literature should be taken. Meteorological Societies (e.g., the Royal Meteorological Society
124 and the American Meteorological Society) also offer the opportunity to raise awareness of the
125 aims of the project.

126 ***Global buy-in***

127 The degree of willingness on the part of governments to release their data will have a direct
128 effect on the effectiveness of the final dataset produced. This level of buy-in is difficult to
129 achieve as, despite the seriousness of the changing climate and its effect on all countries of
130 the world, many National Met. Services still rely on data sales to generate vital revenue. In
131 order for this to be overcome, governments need to see a direct linkage between the quality
132 of the observational record and the accuracy of the projections of future climate.
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134 Achieving this involves a huge task of education which could be another task of the ‘dataset
135 evangelists’ discussed earlier. They could take forward the challenge of communicating the
136 value of basic data to external stakeholders such as governments, industry, the public and the
137 media. They would also logically engage experts in relevant fields outside of meteorology and
138 climatology: for metrology this would be BIPM, and for statistics it would be TIES, the
139 International Environmetric Society (a section of the International Statistical Institute).

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141 A number of mechanisms could be utilised such as the WMO Regional Associations, the
142 Africa, Asia and other Development Banks and the IPCC Working Group Structure. IPCC
143 AR5 for example has a large focus on regional matters.

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Recommendations:

1. Efforts should be made to capitalise on the efforts of existing and ongoing projects
2. A Steering Committee should be established, to be composed of the chairs of the various working level groups established to conduct the various elements of the work, to include experts from outside the climate science community, and a number of 'project evangelists'.
3. The steering committee should have designated authority to make reasonable choices to allow for flexibility and efficacy.
4. The steering committee should annually report to stakeholder bodies on the basis of a single annual report.
5. A small number (3-5) of 'project evangelists' should be identified and mandated to proactively engage with external stakeholders and facilitate effective two-way communications
6. Findings and conclusions should be reported in the scientific literature and at relevant conferences

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