**C3S Data Rescue Services “Southern Hemisphere” Meeting**

**Joaquin Rodriguez** presents “Meritoki Retina”, a software package for data rescue. The system addresses the credit of the data rescuer, it allows you to login and it will track your work taken on by others. It is an online data rescue portal: It allows you drawing rectangles on an image, which you then can digitize into an interface (it generates tables) – or export to from there to zooniverse (shows example of “Scotia”). You can also import the digitized data back from zooniverse. For now it only works on Linux, windows system is planned. Now is in alpha release. Final version will be available soon, it is free to use.

The system is used in Argentina. In terms of data rescued, access to students digitizing the data has been limited due to COVID. More rescue work is planned.

<https://meritoki.github.io/retina-desktop-application/>

Comments: The “Scotia” data have already been digitized by Rob, and assimilated into 20CR. However, it is always great to have duplications when different systems are produced (plus: available “Scotia” data are not hourly). It is planned to implement used machine learning approaches, and the duplication can be used as training data (Mails to: [admin@meritoki.com](mailto:admin@meritoki.com)).

Imaging stopped due to the lockdown.

**Stefan Grab** reports on efforts in South Africa (a 3 page report was sent to Yuri). They have done digitisation on Atlantic, SW Indian Ocean Region, South Africa. Students have been employed to do the digitization. One problem is the restriction to students of the university (it is not allowed to hire people outside the university). The second restriction is SEF. Despite several calls, no students were found that were able and willing to convert to SEF.

In terms of data, the Royal Astronomical Observatory of Cape Town 1834 to 1958, has been completed (rainfall was already digitized, now added other parameters). The Cape colonial records (district commissioner reports) are also digitized. This is a multiple station data set, of which they digitized 7 station, 1866 1906. Only monthly summaries are available. A long daily record from Kimberley 1883-1903 was found (temperature, pressure, rainfall) and digitized . A newspaper record (daily pressure temperature etc., some subdaily) from 7 stations reaching 1870-1890 was found. These are the earliest records for eastern Southern Africa. Furthermore, a record of daily temperature, pressure and wind data 1876-1878 from Maputu, Mozambique was digitized. They also have digitized monthly rainfall for Ascension Island, 1854-1989, and St. Helena (some have already been digitized, but need to be quality checked) for multiple station from 1829 onward. The also contain subdaily data from 1829 and 1830.

A very special record is the Meldrun data from the Indian Ocean. They cover only one month (March 1853), but with daily records from 15 vessels. Also, the earliest data from Lesotho, 1886-1970, were digitized (monthly rainfall form several stations).

Planned: HMS London (1874-1878 is already done), HMS Orestes (1862/3). For La Réunion and Mauritius, data starting in 1850s or 1860s are done (will be finished April/May 2020).

**Joeëlle Gergis** reports on the efforts in Australia (using own funding as kind of a demonstration project). Adelaide has been done back to 1830 subdaily (1834-1846 done on Zooniverse), temperature pressure, wind, rain days. Another record is form Perth, subdaily back to 1830 (1830-1875 has been digitized, manuscript to be submitted soon). Another zooniverse project is on 1880-1900. Drew helped to set up link to zooniverse. Progress has been good. Cross-checking with 20CR reanalysis has started, looks great (heatwave, cold waves). Some funding is available for the future, but a small team.

**Drew Lorrey** reports on the efforts in New Zealand. Several phases of Citizen Science efforts. First effort with Zooniverse showed that there were format issued when getting the data back, which then were improved also with help from Ed Hawinks. The lockdown helped, and lots of volunteers digitised data. A second effort concerned replication and quality control. The result was that 8 replications are required to obtain >99% accuracy. They also ae in contact with Microsoft concerning automatic transcription. With some machine learning plus some rules, this could lead to an improved tool. During lockdown some things were slow, but the time was used wisely, e.g., training sessions were conducted.

Some 118,000 marine measurements were digitized, with metadata and handed over to Yuri, but it would be great to format to IMMA and get knowledge on that. Ca. 2 million measurements remain to be recovered from the same source. They approached the New Zealand government concerning funding on automatic transcription; the lockdown had negatively affected the funding. Most data are marine data.

Drew works with Mariella on El Niños in the 19th century in the framework of a Newton Fund project.

**Richard Crouthamel** reports on data rescue work by IEDRO.

Plans for near future:

**Yuri Brugnara** says that formatting of Argentinian data will be too much for us to do. Can Pablo get funding to do that?