



UCM4 USER REQUIREMENTS UPDATE

CLAIRE BULGIN, UNIVERSITY OF READING



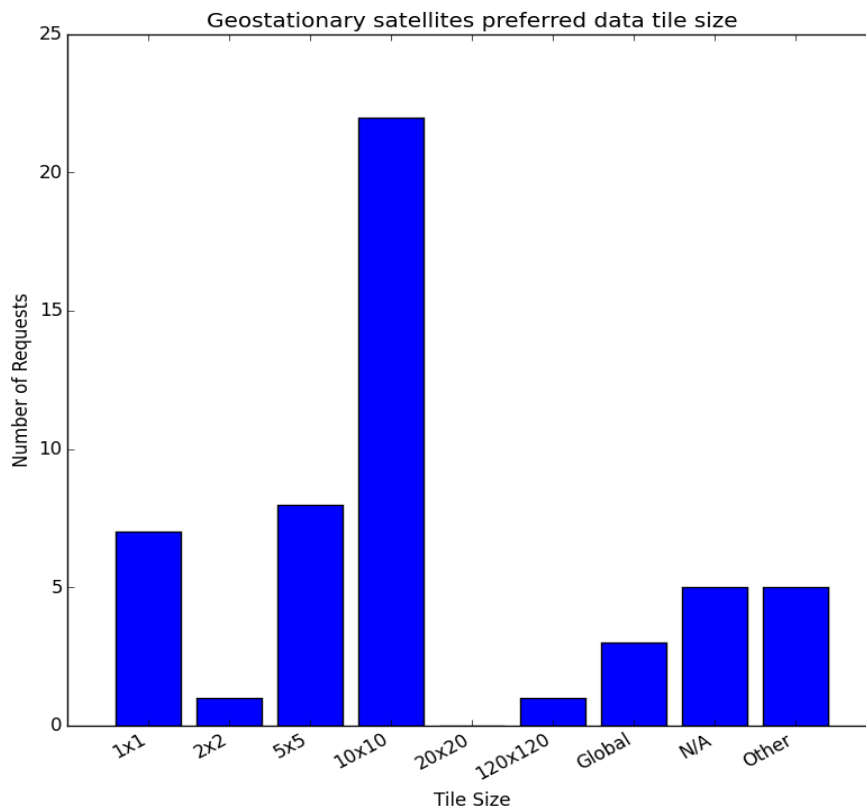
We obtained an overview of what scales LST data are being used at, across the community.

At what scale do you use LST data?	Number of Respondents
Global	14
Regional	32
Local	27

We also clarified users preferences for data at UTC or local times.

Timing of LST Data Provision	Number of Respondents
UTC	36
Local Time	12

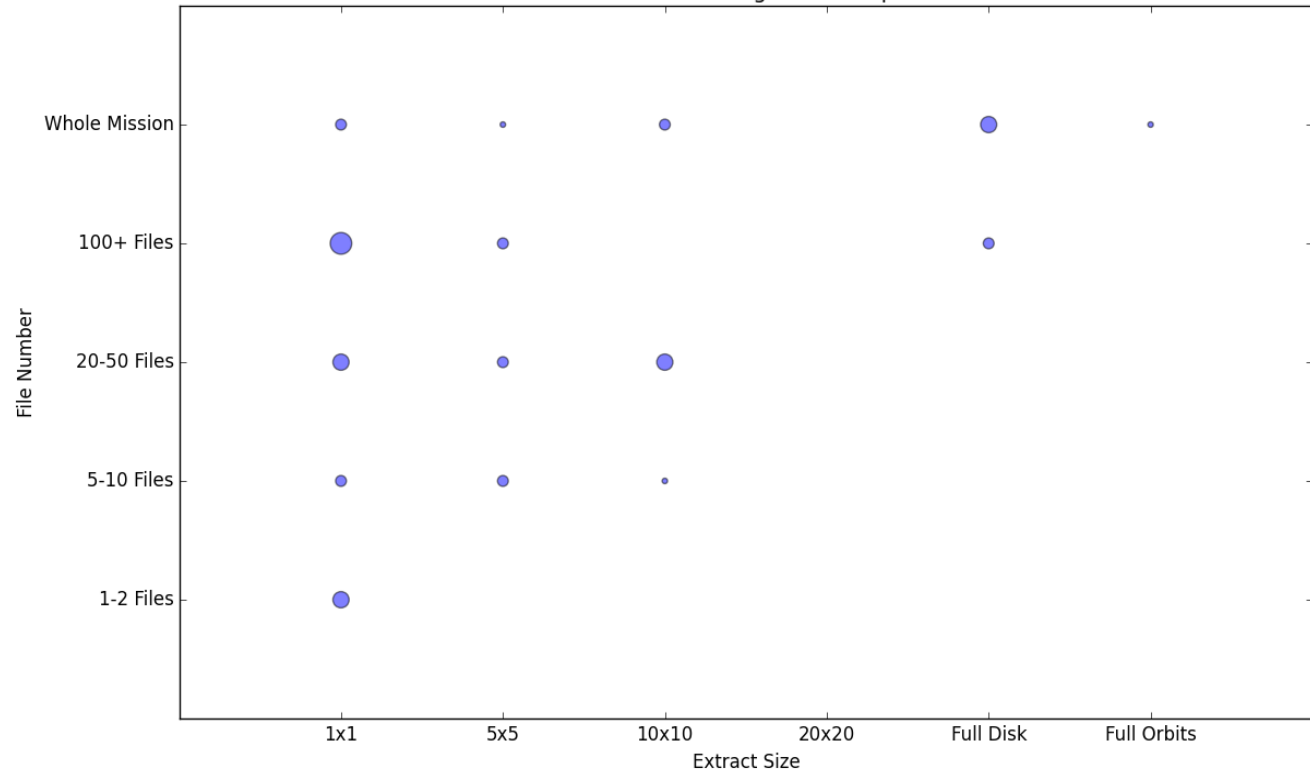
Were the tools presented in plenary sufficient?	Number of Respondents
Yes	40
No	2



48% of UCM responses related to tiled data indicated that 10x10 degree resolution was sufficient. Smaller tiles could be extracted via use of the data portal.

Cloud Filtering in the Data Portal?	Number of Respondents
Yes	36
No	9

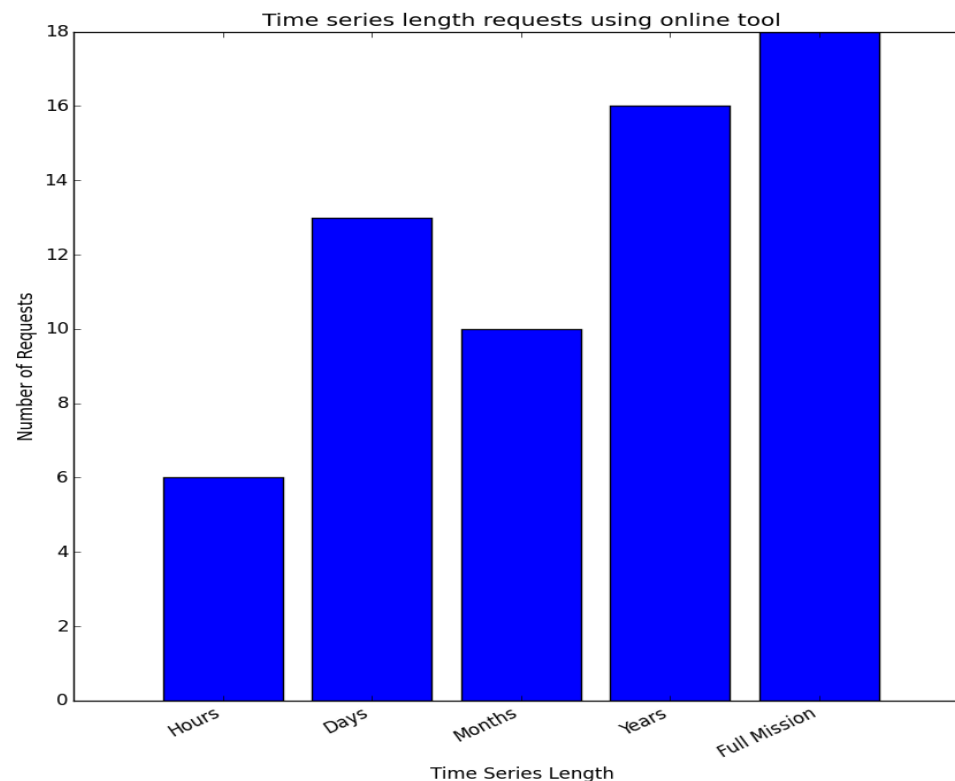
Extracts over which cloud clearing will be requested at download

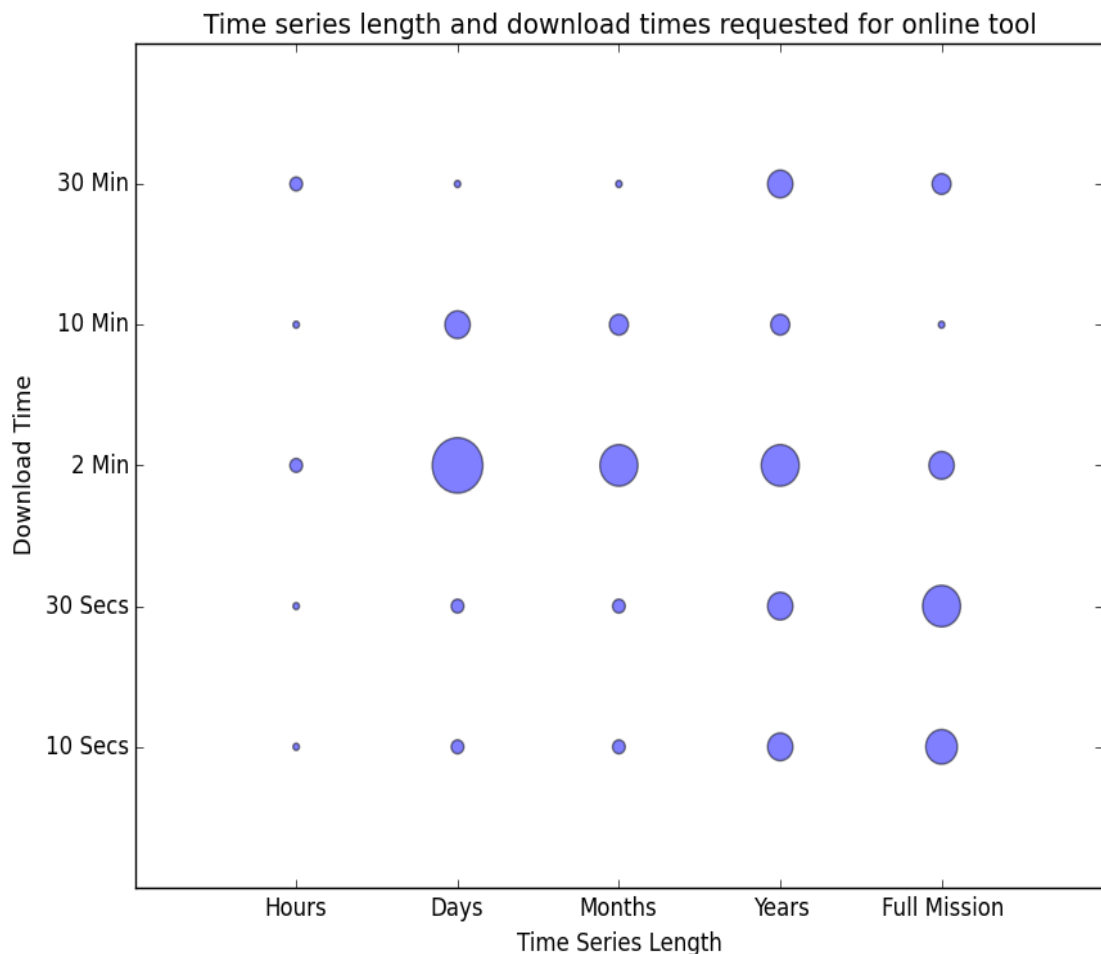


Extract sizes and the number of files for which cloud filtering will be requested through the data portal.

How would you like to download time series data?	Number of Respondents
Plot	2
CSV Data File	14
Both plot and data file	29

How would you like to download time series data and over what time period would you extract these data? Responses are split across a range of days to full mission.

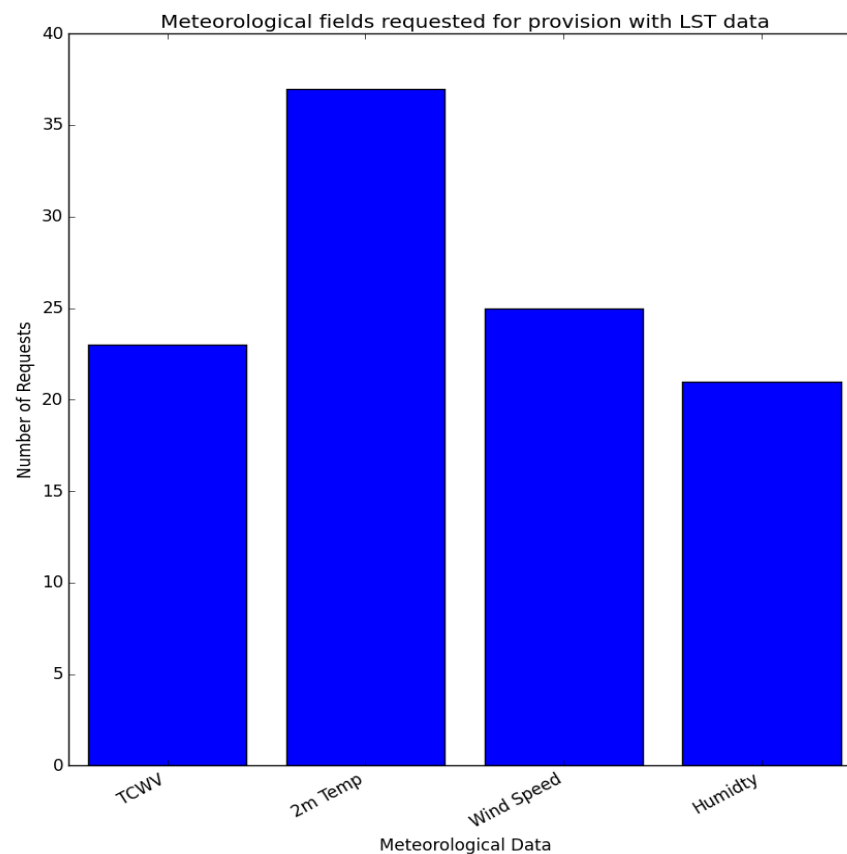




The most popular choice was time series over days with a download time of two minutes. Longer time series downloaded within shorter time frames may not be feasible given current technology.

Requirement for meteorological fields?	Number of Respondents
Yes	39
No	8

Most participants at UCM3 requested 2m air temperature data. Total column water vapour, wind speed and humidity were requested by around half of all respondents.



Product type and extraction options:

- Product types and extraction options are good – native L2 products are also provided.
- A tool to aggregate tiles upon download would be useful.
- For validation and time series extraction single pixel or 3x3 extracts would be optimal for urban applications.
- Data extraction should be ‘user selectable’ in terms of both area and requested data fields.

Global and variable metadata:

- Overall the metadata and comment fields are good.
- For quality flags, comprehensive documentation was requested with the possibility of using values of 1-5 consistent with sea surface temperature products.
- ‘Quick view’ metadata tool to work with netCDF would be useful.
- Proximity to cloud could be a useful metric to provide with LST data.

Auxiliary data fields:

- Common themes for auxiliary data provision included fractional vegetation cover, total column water vapour, NDVI (+ angles), viewing geometry, 2m air temperature, emissivity, wind speed and uncertainties in the LST.
- Data provenance was also mentioned in this discussion.

Cloud filtering in data download/extraction:

- The dominant response was that cloud filtering at the point of data download was extremely relevant and that a tool enabling this would be widely used.
- Usage may be application specific – perhaps more relevant to regional or local studies.
- Cloud screening algorithm applied would need to be documented.
- Cloud fraction at different data levels may be useful information for users.

Number	Requirement	Comment
REQ-26-TR	Provide LST data at an hourly resolution for UTC times.	36 out of 48 respondents in the UCM3 mini-questionnaire expressed this as a preference. This is applicable at hourly resolution; otherwise data at local times would be needed.
REQ-32-TR	Provide information on 2 m air temperature, aerosol affected pixels, the diurnal cycle, data adjustment, total column water vapour, wind speed and humidity.	These were requested by > 45 % of respondents (to either the original user survey or the UCM3 mini-questionnaire).
REQ-39-TR	Provide tools for: <ul style="list-style-type: none"> a) Data reading and sub-setting b) Data extraction on different grids c) Data compositing d) Generation of match-up datasets e) Data visualisation tools f) Data inter-comparison tools g) Data processing tools h) Data analysis tools i) Trend analysis j) Tools for visualisation and evaluation of data uncertainties and quality. k) Time series extraction 	For (k) provide an extraction tool that allows cloud filtering (required by 80 % of respondents to the UCM3 mini-questionnaire). Also, for (k) provide data as both a plot and csv data file (csv data files were requested by 96 % of UCM3 respondents and plots by 69 %). A time series extraction tool should be able to cover an entire instrument mission as a significant number of UCM3 participants would use it at this scale.
REQ-43-TR	Provide a data download tool with the ability to screen data as a function of cloud cover prior to download.	80 % of respondents to the UCM3 mini-questionnaire said that they would like to filter data by cloud cover fraction when downloading data from the data portal.
REQ-44-TR	Provide tiled data for L3, L4 and geostationary satellite products at 10 x 10 degree resolution.	48 % of UCM3 responses relating to tiled data indicated that this resolution was sufficient. Some respondents requested smaller tiles (from 1-5 degrees). This could be considered in the future or achieved by the user via use of the data extraction tool.