# Brief technical information on accessing HimawariCloud

1) Protocol  HTTP/1.1 and HTTP/2 (TLS1.2 or higher)

2) URL   https://www.aaaaaaa.bb.cc/tops/[Nation]/top
        (Information: https://www.aaaaaaa.bb.cc/index.html)
* [Nation] is the short name of the user's nation which is assigned by JMA.
* "aaaaaaa.bb.cc" represents a domain name of HimawariCloud server

3) Authentication method: BASIC authentication + Cookie authentication
    - Access the top page and undergo BASIC authentication with the ID and password.
Access pages linked from the top page such as "Current". The server will respond to the
client with a cookie.
    - After BASIC authentication, the client must use the cookie to access HimawariCloud.
    - The cookie is associated with the user account information, and is used to verify all
file access permissions.
    - The cookie is valid only for 4 hours.

4) Structure of top page



- The top page has links to three type of pages: Current, Time span (hh:00 – hh:59)
and Others. The top page is updated every hour on the hour.

- The Current page contains links to data files for the latest N hours uploaded from JMA to HimawariCloud sorted by time of receipt. It is updated every M minutes. Users must select one of two options (N = 1, M = 1) or (N = 4, M = 8).

- The Time span pages contain links to data files created between hh:00 and hh:59. Each file has an observation start-time string in its name. Hyperlinks are sorted by observation time with refreshment every M minutes (the same frequency as the Current page).

- The Others page contains links to files for observation times over 72 hours ago. Most files are uploaded a few minutes after being created, but some may be uploaded X hours later. Links are moved to the Others page 72 – X hours after the relevant files are uploaded to HimawariCloud. The Others page is updated every M minutes when new file links are present.

- All files and links are deleted 72 hours after file upload.

- All links to files are listed on the Current page first. They are also listed on the Time span or Others page until 72 hours after upload.

5) Structure of Current page
https://img.aaaaaaa.bb.cc/contents/[Nation]/current?AP_=[parameter]
* "aaaaaaa.bb.cc" represents a domain name of HimawariCloud server

6) Notes
- Each user receives a cookie in BASIC authentication under https. In the HimawariCloud service, the cookie is associated with the user account. User identification is performed for every file download with the cookie data included in the http GET request, and will fail if the cookie has expired or is not included in the request.

- Cookies are valid for 4 hours. Users must execute BASIC authentication regularly for cookie renewal.

- JMA expects users to access the Current page regularly and download all desired data via the links there.

- Data file links on the Current page are listed and sorted by the time at which the HimawariCloud server receives data from JMA's server. This is not necessarily the same as observation time sorting.

- As the JMA server uses LIFO (last-in-first-out) cue control, some files may be uploaded to HimawariCloud significantly later than the observation time. File links on the Current page are sorted by the time of receipt by the HimawariCloud server; users can retrieve all files without loss by accessing this page regularly.

- Users unable to access the Current page for longer than data links are kept (1 hour/4 hours) due to user-side issues can obtain non-accessed data from the links on the Time span and Others pages after the issues are resolved.