

WORLD METEOROLOGICAL ORGANIZATION

**COMMISSION FOR INSTRUMENTS
AND METHODS OF OBSERVATION**

**TASK TEAM ON REVISION OF THE INTERNATIONAL
CLOUD ATLAS
Second Session**

Geneva, Switzerland

6 to 9 October 2014



FINAL REPORT



DISCLAIMER

Regulation 43

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

Regulation 44

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

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EXECUTIVE SUMMARY

The second session of the CIMO Task Team on Revision of the International Cloud Atlas (TT-ICA-2) was held from 6 to 9 October 2014 at the WMO Headquarters in Geneva, Switzerland.

After commencing with a brief report from the Chair of the TT-ICA, Dr Steve Cohn, in which he reminded the session of the work completed since the project began, the activity that had taken place within the WMO Secretariat since the first session of TT-ICA in November 2013, and summarized his expectations of the team during the session, each task leader provided a summary of the initial work performed under their assigned task(s).

Plenary discussion followed of a few key issues raised by the task leaders during their reports. The session then separated into breakout groups, where most of the remainder of the session was spent, as each group progressed the tasks assigned to it. By the end of the session, the status of the revision of the ICA was as follows:

- The Image and Metadata Sub-Group had prepared a list of those images in the current ICA that are in need of replacement (virtually all) and a list of the images required for the new ICA. It had also prepared a list of metadata required or desired to accompany each image, and it had prepared a list of cloud types for which time-lapse movie loops would be sought for the web-based version of the ICA.
- The Glossary Sub-Group had drafted and refined a list of terms to be included in the Glossary, having concluded that the glossary should contain only terms not defined within the body of the text.
- The Text Sub-Group had identified all parts of the text in need of revision, and had completed the first part of that revision.
- The Image Acquisition and Sorting Sub-Group had developed a strategy for acquiring the desired imagery and metadata and had developed a prototype website, to be hosted by the Hong Kong Observatory, for handling candidate submissions made directly to the website by the donors so that they could be easily scrutinized by the experts during the Image Assessment process.
- The Graphical Decision Aid Sub-Group had developed a draft version of the Aid to be used in the new ICA, which encapsulates best practice features of several decision aids in use today by different WMO Members.
- The Web Design Sub-Group had explored the functionality requirements for the website for the new version of the ICA and had assessed these requirements as essentially achievable using the expertise of the Task Team without it being likely that they will need additional assistance from external experts.

Having made significant progress against most of its tasks, the session agreed on the work to be performed over the coming months by each sub-group, and updated its workplan and project schedule to reflect the progress made to date and expected for the remainder of the project.

The revised work plan and schedule suggest that TT-ICA expects to make sufficient progress on the project over the coming five months to be able to provide some useful late input to Cg-17.

AGENDA

1. ORGANIZATION OF THE SESSION

- 1.1 Opening of the Session
- 1.2 Adoption of the Agenda
- 1.3 Working Arrangements of the Session

2. REPORT OF THE CHAIR

3. INITIAL PROGRESS AGAINST TASKS

- 3.1 Report on Task 1: Work Plan and Schedule
- 3.2 Report on Task 2: Image Sub-Group (Needs)
- 3.3 Report on Task 3: Glossary Sub-Group
- 3.4 Report on Task 4: Text Sub-Group
- 3.5 Report on Task 5: Image Acquisition and Sorting
- 3.6 Report on Task 7: Decision Aid
- 3.7 Report on Task 8: Web Design

4. BREAKOUT GROUPS TO PROGRESS TASKS

5. BREAKOUT GROUP REPORTING

6. STRATEGY AND OPTIONS FOR DEVELOPING AND HOSTING ICA WEBSITE

7. REVIEW AND REVISION OF WORK PLAN AND SCHEDULE

8. DRAFT REPORT OF THE SESSION

9. CLOSURE OF THE SESSION

GENERAL SUMMARY

1. ORGANIZATION OF THE SESSION

1.1 Opening of the Session

1.1.1 The second session of the CIMO Task Team on Revision of the International Cloud Atlas (TT-ICA-2) was opened on Monday 6 October 2014 at 9:30am, by its Chair, Dr Stephen Cohn, who welcomed the participants to Geneva and expressed his pleasure that all of the members of the initial task team had returned to continue the work and were present at the session. Dr Cohn especially welcomed Ms Colleen Rae (South African Weather Service), who had been unable to attend the first session of the team in Geneva in November 2013, and Mr KH Tam (Hong Kong Observatory), a new member of the team. Dr Cohn also advised the session that two additional Invited Experts would not be present at the meeting but had been selected for the Task Team: Dr. Anatoly Tsvetkov of the Russian Federation (liaison in regard to the Russian Cloud Atlas), and Mr Jose-Antonio Quirantes-Calvo of Spain (liaison in regard to the Spanish Cloud Atlas). The list of participants in the session is provided in [Annex I](#).

1.1.2 Dr Ruedi then welcomed the participants to Geneva. She advised the session of the positive response to the TT-ICA-1 report and in-principle agreement to its recommendations that had been received from the CIMO Management Group, the 2014 meeting of Presidents of Technical Commissions and Regional Associations, The WMO Publications Board, the 66th Session of WMO Executive Council and the 16th Session of the Commission for Instruments and Method of Observation. She reminded the session of the importance to WMO of the task team's work. She reminded the session that the 17th Session of the World Meteorological Congress will be held in Geneva during May 2015 and that, subject to sufficient progress with the revision of the ICA, it was hoped to be able to show Cg-17 what it could expect the new ICA to look like when published. In closing, Dr Ruedi thanked the participants for their contribution and wished them a successful session.

1.2 Adoption of the Agenda

The Agenda for the session was adopted as reproduced at the beginning of this report.

1.3 Working Arrangements for the Session

The working hours and tentative timetable for the meeting were agreed upon.

2. REPORT OF THE CHAIR

2.1.1 The Chair of the Task Team, Dr Stephen Cohn first thanked Mr Bruhn for agreeing to serve as his vice-Chair. Dr Cohn then briefly summarized the task team's activities to date. TT-ICA was re-formed during August 2014, consisting of members with diverse experience in cloud observations, and Secretariat participation and support. The committee is lucky to have consistent and expanded membership, with the return of all members of the 2013 Task Team that proposed specific steps and changes for revision of the ICA, and the addition of Mr Tam from the Hong Kong Observatory and the two invited experts.

2.1.2 TT-ICA met by teleconference in early September 2014. At this meeting it reviewed and clarified its Terms of Reference, refined a Work Plan, and established sub-groups to make initial progress on the Work Plan tasks. Dr Cohn expressed his appreciation to all the members of the Task Team for their willingness to fully participate in multiple tasks. During the September teleconference, TT-ICA agreed to have a face-to-face meeting of the full Task Team in Geneva in

October 2014. The sub groups discussed progress to be made in advance of the face-to-face meeting.

2.1.3 In brief, initial progress was to have been made against seven tasks:

- a. (Task 1) Prepare a detailed project plan;
- b. (Task 2) Identify needs for new or updated imagery in preparation for a letter to interested parties to provide such imagery and metadata.
- c. (Task 3) Identify terms to be included in a Glossary and draft a Glossary
- d. (Task 4) Review, revise, and update all the ICA text
- e. (Task 5) Receive, sort, categorize, and vet candidate imagery and metadata
- f. (Task 7) Update the Cloud Coding Decision Aid and develop a simplified Aid for genera
- g. (Task 8) Define the web appearance and functionality of the web-based ICA

2.1.4 Dr Cohn suggested that the overall goals of this session were to:

- a. Ensure the TT has a common understanding of all aspects of the intended revision of the ICA, and of the draft Work Plan, going forward.
- b. Make significant progress toward creating a list of required and desired imagery/metadata that will be requested from various sources. This includes images for the main Atlas and the new Glossary. Requesting and receiving these images is on the critical path of the work plan, so its timing should be advanced as much as is practical.
- c. Take advantage of face-to-face discussions and break-out groups to make good progress in all other areas of work. This includes:
 - i. discuss alternative options for requesting, assembling, and sorting imagery and metadata from NMHS or other groups;
 - ii. discuss the degree to which the current ICA text will be revised to modernize and add new classifications. Raise, and where possible resolve, any major questions of modern use of terms. Consider resources required;
 - iii. discuss initial work reviewing existing cloud classification decision aids in use by different WMO members, and deciding on a best-practice model for the new ICA;
 - iv. review aspects of the web design, updates to the draft discussed by the earlier TT (2013), and elements that need further investigation or consideration.
- d. Update the work plan based on a more thorough understanding of each of the planned tasks.

2.1.5 Following his report to the session, a summary was provided of the activity carried out since the first Task Team delivered its recommendations to the extraordinary session of the CIMO Management Group held on 16 January 2014. The positive response of the CIMO Management Group to the work and recommendations of the Task Team was stressed, also that CIMO MG had noted that, since the proposed work was not included in the CIMO work plans or in the WMO Regular Budget, it would require supplementary resources to be identified.

2.1.6 Subsequently, Dr Calpini had informed the meeting of the Presidents of Technical Commissions and Regional Associations in January 2014 of the recommendations of TT-ICA. PTC-PRA strongly supported the proposal of CIMO to develop a new edition of the International Cloud Atlas (ICA) recognizing that this document is fundamental to the operation of NMHSs and agreed that WMO needed to identify financial resources to enable funding this activity and recommended that all possible mechanisms, regular budget and/or trust funds, but also possibly considering private/public partnerships. Dr Calpini met with a similar response from ICG-WIGOS-3 when he appraised the meeting of the work and recommendations of TT-ICA.

2.1.7 A presentation to the WMO Publications Board in March 2014 was welcomed and the Publications Board formed a Task Team to support TT-ICA by examining options for funding the work, possibly through a public-private partnership

2.1.8 EC-66 strongly supported the proposal to develop a new edition of the ICA as a WIGOS-related document that is fundamental to the operation of NMHSs. It noted the urgency to quickly update the ICA in view of the large media interest for the topic and the possible impact it could have on WMO's responsiveness image, were WMO to delay the update. The Council encouraged CIMO to try engaging interested partners in this activity to reduce the load on its experts and to consider the format options (web, CD and printed version) for ease of disseminating the ICA to Members having limited Internet connectivity and all others who were interested.

2.1.9 Most recently, revision of the ICA was considered at CIMO-16 in July 2014. The Commission expressed its appreciation for the work of the CIMO Task Team on the International Cloud Atlas (TT-ICA), and endorsed the view of the CIMO MG that the International Cloud Atlas (ICA) should be the world's authoritative, primary source of cloud classification and that it should be fully comprehensive and contain the most up-to-date information. The Commission also endorsed the in-principle agreement of the CIMO MG with the recommendation of TT-ICA to carry out an extensive revision and update of the ICA. Noting that no funding is available within the WMO IMOP budget to fully finance this activity, the Commission requested the Secretary-General to consider identifying the required funds so that the work can be completed by the end of 2015.

2.1.10 So that the work involved in the proposed revision could get underway during 2014, rather than delaying the start until after Cg-17 in May 2015, D/OBS agreed to provide some limited start-up funding out of the regular OBS budget by reprioritizing some other activities. It was noted that the current session of TT-ICA had been enabled by this resource allocation, as had been the process of obtaining high resolution digital images of each of the photographs used in the current version of the ICA, so that they are ready to use as reference images in the new edition.

3. INITIAL PROGRESS AGAINST TASKS

3.1 Task 1: Prepare a Detailed Project Plan

3.1.1 Dr Cohn reminded the session of the Terms of Reference of TT-ICA and of the different Work Plan tasks to be performed, of the nominal timelines for each and interrelationship with other tasks, and of the membership of the sub-groups assigned to perform each task. Mr Bruhn then summarized the overall timeline for the project, noting that by the conclusion of the session, the Task Team would need to have revised the expected timelines for each task in the light of the progress made in-session during the week.

3.2 Task 2: Image Sub-Group (Needs)

3.2.1 Mr Bruhn described the work performed to date against this task by the sub-group (Bruhn, Anderson, Trice). The sub-group had examined all images in the ICA and determined those that merit use as more than reference images. The sub-group proposed that new imagery be sourced using the Koppen-Geiger Climate Classification Scheme, which has six major categories (a possible alternative was to classify candidates according to their latitude band). The group had examined and evaluated (for suitability) each of the 225 images in the current ICA (See [Annex II](#)). Mr Bruhn noted that some of these would warrant re-examination during a breakout session. He also noted that for some images, there is a need for editing or adding to the Metadata. He noted a desirability for more *mutatus* information in the image descriptions and suggested that time-lapse video or photo series to show transition would help with this.

3.2.2 Mr Bruhn noted that the new Spanish cloud atlas has excellent high resolution imagery, but, like the 1975 ICA, contains some errors in cloud description.

3.2.3 Mr Bruhn concluded that replacements will be required for 80-90% of the existing images in the ICA, though the current images will appear alongside the new reference images to preserve traceability. Hence it seems likely that the new ICA will require as many as 700 new images of clouds and other meteors.

3.2.4 Alternative mechanisms for sourcing the new imagery were discussed at some length, with a number of options considered:

- Start by asking/targeting only specific photographers who specialize in taking high quality photographs of optical phenomena;
- Start with a letter to all PRs inviting submission of candidates;
- Invite submission from all known meteorological societies (e.g., RMS, AMS, Cloud Appreciation Society);
- Invite public submissions via a widespread advertising campaign.

3.2.5 The session was unable to decide on an optimal sourcing mechanism without further consideration in a breakout session.

3.2.6 Mr Bruhn concluded by noting that the sub-group had four main goals to achieve during the session:

- Identify needs for new/replacement imagery (how many images will be required?)
- Identify needs for metadata (this would need to involve the Task 5 sub-group)
- Generate the list of images and
- Determine the method of sourcing and storing the imagery.

3.3 Task 3: Glossary Sub-Group

3.3.1 Mr Lovell presented a preliminary report on the required contents of the Glossary. He described his search through the ICA to identify terms which might be included, which led to the preparation of a list of approximately 150 candidate terms. Mr Lovell noted that a key question to be answered by TT-ICA during the session was whether the Glossary should be all-inclusive (potentially repeating some definitions provided in the main text of the ICA), or complementary (containing only terms not defined elsewhere in the ICA). A second question to answer was whether or not the web and print versions of the glossary should be identical.

3.3.2 After some preliminary discussion, the session decided to further address this matter as part of a breakout session. Mr Lovell suggested that the overall aims of a dedicated breakout session on this topic would be:

- To agree on what terms to include in the glossary
- To obtain suggestions for additions or changes to the draft list of candidates;
- To decide on a presentation format for the information (layout, font, italics, size, etc.)
- To refine the work plan for this task

3.3.3 Mr Cohn suggested that, in view of the close inter-relationship between the work of the Text sub-group and the Glossary sub-group, the two should combine as a single breakout group.

3.4 Task 4: Text Sub-Group

3.4.1 Ms Rae described how this sub-group (Rae, Anderson, Lovell, Cohn) had divided the text of Volume 1 into two sections, and each section had been examined and commented on by two members of the task team. These comments comprised part of the meeting input document for this task.

3.4.2 Ms Rae suggested that the next step in this process would be to combine all four reports into one document and to forward this to the rest of the TT-ICA team for comment and feedback. Ms Rae anticipated that this work could be largely completed by the end of the session.

Accordingly, she proposed that during the session the sub-group work through the comments page by page, make draft changes to the text where this comprises simply modernizing the language. New text to accompany new imagery would need to await the provision of the new imagery.

3.5 Task 5: Image Acquisition and Sorting

3.5.1 Mr Tam provided the session with a demonstration of the prototype web-page that he has developed at HKO for receiving and displaying image submissions, so that they can later be easily sorted and assessed by the Image sub-group. The session was impressed with the extensiveness of Mr Tam's experience and web-editing skills, and expressed its thanks for HKO's willingness to assist with the development of the web site and the submission of images.

3.5.2 Mr Tam's presentation was followed by more detailed discussion on the volume and upload capacity of the website, consideration of the inclusion of time lapse imagery and how analysis of the metadata associated with the images might enable partial assessment and sorting of the images by an automated process. This latter potential may be important if the response to requests for images is overwhelming. The session also discussed how some of the metadata may help to 'fill in the blanks' for other types of metadata, for example, date and place metadata may facilitate editing or drafting of accompanying descriptions, as well as the specification of climate zone and season.

3.5.3 The team then began reviewing the compulsory and supplementary metadata with a view to ensuring that everything required is collected at the first attempt (to avoid the need to go back to image authors for more information).

3.5.4 The session agreed that this sub-group should give priority during the remainder of the session to finalizing the list of metadata and deciding on the image sourcing strategy to be adopted.

3.6 Task 7: Decision Aid

3.6.1 Ms Thurig-Jenzer described the results of her analysis of the advantages and disadvantages of each of the various Decision Aids in use by individual WMO Member organizations. She provided a comparative presentation of those that she had access to, including:

- The current ICA Decision Aid;
- The UK Met Office Decision Aids;
- The MeteoSwiss Decision Aid;
- South African Weather Service Decision Aid;
- SMN Argentina Decision Aid;
- "Identify a cloud" by Royal Meteorological Society;
- Identification of the 10 cloud genera by MeteoSwiss;
- Cloud comparison submitted by Ernest Lovell;
- Cloud flow chart submitted by Ernest Lovell.

3.6.2 Ms Thurig Jenzer noted that the first priority for the ICA is the NMHSs, so she suggested that the first focus of the TT-ICA's efforts should be the CL, CM and CH flow charts, rather than the condensed version with just the ten genera. There was brief discussion on whether to use cartoon images or photos to illustrate the primary decision aid. The consensus was to use colour cartoons (for both hard copy and web versions), which can clearly illustrate the features of focus, and to link to a corresponding photograph when the cartoon is clicked on (for the web version). There was also a brief discussion of the implications of the transition to BUFR code for reporting of observations.

3.6.3 Other issues discussed by the session included:

- Page format: Landscape preferred;
- Use of the same layout for the web and hard copy (with only small differences if required)
- Shape of the cartoons: square, rectangular? Up to the sub-group to decide
- Use of the colour cartoons from Meteoswiss. Check representativeness for all regions.
- Once drafted, Decision Aid to be sent to Mr Tam for inclusion on the ICA webpage.

3.6.4 Dr Cohn requested that this sub-group focus its activity during the remainder of the session on:

- Producing a prototype of the full Aide by the end of the session; and
- Producing a prototype of a simplified version by the end of the week. (This would be a more difficult task, since there is not an existing version.)

3.7 Task 8: Web Design

3.7.1 Mr Trice provided the session with a recap of his presentation from the previous meeting of the Task Team, since there had been no change in the characteristics desired for the website. Mr Trice's presentation was followed by discussion on various aspects of the web design. The session agreed that a CD or DVD of the web version of the atlas should ultimately be produced to cater for those with computing facilities but limited internet access.

3.7.2 At the conclusion of discussions on this item, Dr Cohn suggested that breakout groups for Tasks 2, 5 and 8 have much in common so could be combined where practicable.

4. BREAKOUT GROUPS TO PROGRESS TASKS

4.1 Immediately prior to separation into breakout groups, Dr Cohn proposed that the work of the breakout groups might benefit from further plenary consideration, first, of two particular matters: the strategy to be adopted for image sourcing, and the strategy to be adopted for the glossary.

4.2 Discussion of Image Sourcing Strategy

4.2.1 Dr Cohn first noted that potential input may be provided on a few hundred different cloud categories, so assuming at least several candidates for each, sorting and selecting imagery could comprise a substantial task. While the Task Team might ask Permanent Representatives (PRs) to manage the process of collection and initial filtering of the imagery, this might lead to images of highly variable quantity and quality being submitted from different countries, and to significant delay in receipt at WMO, so, although it would be important to provide PRs with an opportunity to participate, it would be better to avoid a strong dependence on them if possible. Dr Cohn noted, too, that there are likely to be particular individuals and groups who are likely to have excellent images available for consideration, possibly with accompanying metadata, for many categories. DR Cohn noted lastly that the HKO website had excellent potential for facilitating image submission, so this opportunity should be capitalised upon if possible.

4.2.2 Dr Cohn, then summarized the main suggestions that had been made during the task presentations and asked the breakout group on data acquisition to consider these further during its detailed deliberations to follow:

- Collect submissions through the HK website. Then ask PRs to arrange sorting and vetting of images submitted from their country.
- Multi-step sourcing: First ask for input from known individuals and groups. This reduces the number of categories that remain unfilled. Second, ask PRs and more broadly for examples targeting the remaining (unfilled) categories.

4.3 Discussion of Strategy for the Glossary

4.3.1 Dr Cohn noted that discussion of this item during the task presentations suggested two possible models for the glossary: a 'thick' option and a 'thin' option.

4.3.2 Dr Cohn noted that the current ICA has an Index which lists the page where entries are defined (if these exist), described, and /or used. He asked the session to consider whether and how the ICA might refer to other glossaries (such as the International Meteorological Vocabulary: WMO No 182), and whether the ICA definitions should be consistent with those of other glossaries. He posed some key questions to be answered during the session:

- Should the Glossary
 - be 'stand-alone', repeating definitions provided within the body of the ICA, or
 - should it list all terms but contain pointers to where definitions are already provided in the text and include definitions only for terms not defined in the text, or
 - should it exclude those terms already defined in the text (the official classifications) and include only other terms?
- Will the answer to this question differ for the web and printed versions?

4.3.3 After some discussion, the session concluded that the glossary should exclude those terms already defined in the text, but should include as many as possible of the commonly used alternative or unofficial terms, while the index should include all terms defined in the text or the glossary. It requested the breakout group responsible for this topic to refine the draft list of terms for the glossary on this basis. It was noted that advice in regard to 'storm'-related terms to be included in the glossary should be sought from the relevant community (the US National Severe Storms Laboratory in the first instance). The session agreed that the terms included in the glossary should be the same for both web and print versions of the new ICA.

4.4 Breakout Group Activity

4.4.1 The session then divided into two breakout groups to progress the individual tasks. One of these was essentially composed of the sub-groups for Tasks 3 (Glossary), 4 (Text) and 7 (Decision Aid), while the other included sub-groups for Tasks 2 (Images and Metadata), 5 (Image Acquisition and Sorting) and 8 (Web Design). The breakout groups continued progressing their tasks for two days, coming together at the end of each day to report to the whole session on their progress.

5. BREAKOUT GROUP REPORTING

5.1 Task 2 (Images and Metadata)

5.1.1 This breakout group had commenced its work with detailed consideration of the analysis of existing imagery performed by Mr Bruhn prior to the meeting, and after examination of the newly published Spanish Cloud Atlas, agreed that, with few exceptions, almost all of the current images in the ICA were in need of replacement. The sub-group prepared a listing of the number of images of each cloud etc. type that would be required for the new ICA ([Annex III](#)).

5.1.2 The group then considered image metadata requirements at length, in parallel with their consideration of the image acquisition and sorting process. They discussed the ways in which collecting relevant metadata could allow processing and sorting of the incoming imagery. They noted that it is likely that there will be a large surplus of submitted imagery, so the way the triage stage is handled will be important. The group also discussed ways in which the metadata could help to fill in the blanks for other areas e.g. date and place metadata will allow editing (or writing) of the accompanying descriptions, as well as specification of the climate zone and season. Ultimately, the group finalized the list of compulsory and supplementary metadata (see [Annex IV](#)) with a view to ensuring that everything needed is collected at the initial stage (to avoid having to go back to donors for more information).

5.1.3 The sub-group summarized its remaining work to come after the session as follows:

- add the new cloud classification requirements to the new/replacement imagery list;
- add glossary imagery requirements to the new/replacement imagery list;

- expand meteor imagery requirements to include examples of all meteors referenced in the ICA. Some examples are parhelia (commonly known as 120° parhelia), lunar photometeors, and secondary and supernumerary rainbows;
- investigate and report on the feasibility of sourcing specific new imagery from high quality specialist sites. Some examples are www.paraselene.de/English and www.atoptics.co.uk/ for photometeors and www.nightskyhunter.com/ for mesospheric clouds;
- assist and liaise with Task 5 (lead Mr Tam) to ensure functionality requirements of the web image submit portal are met.

5.2 Task 3 (Glossary)

5.2.1 Based on the guidance provided earlier in the session, the sub-group considering this Task selected those terms from the initial draft list provided by M Lovell which met the criteria to be included in the ICA. In so doing, the number of terms was reduced from the initial 178 to approximately 50 (see [Annex V](#)).

5.3 Task 4 (Text)

5.3.1 During the breakout session, the sub-group for Task 4 (Text) first integrated the four sets of individually commented text provided by its members prior to the session and combined these into a single document for further consideration. It then began progressive consideration of each suggested change, replacing obsolete text where straightforward, and highlighting more complex cases for later revision.

5.3.2 By the end of the breakout sessions, the group had processed the first XX pages of the total of XXX pages of text. The main changes or corrections made address the replacement of archaic language with more modernized English and to bring the information that falls under the footnotes up into the body of the text.

5.3.3 Some inconsistencies in the text were identified: these will cross-checked with previous editions of the ICA and with other references and corrections will be made where applicable. All changes will be noted and any major discrepancies will be collated for use within the preface to the updated edition of the ICA.

5.3.4 The breakout session had some difficulty finding replacement words for some of those that had been identified as outdated in the text. It was proposed that to address this issue, in these cases the original word might best be retained, but it and its definition included in the Glossary, to aid understanding by a modern audience.

5.4 Task 5 (Image Acquisition and Sorting)

5.4.1 In consideration of the large number of replacement images to be sourced, the breakout group focused much of its discussion on alternative mechanisms for acquiring and sorting the imagery and metadata, based on the guidance provided by the plenary discussion prior to breakout.

5.4.2 It was decided that the best way to approach this would be to request donors to submit their imagery directly via a web portal. By designing the portal to enable simple sorting and filtering of the images once submitted, the work subsequently required of the experts to further sort and filter the images, and to select the best candidates for the ICA, could be minimized.

5.4.3 The requirements for such a web portal were discussed with Mr Tam, who then designed and built a prototype image and metadata submission webpage for the sub-group to review. The sub-group made a number of suggestions and proposed refinements, and Mr Tam agreed to develop the portal further after the session.

5.4.4 Recognizing the value for the web-based version of the ICA of time-lapse movie loops to show the evolution of certain cloud types, the sub-group also prepared a provisional list of such cloud types for which this would be useful and for which movie imagery would also be sought from the donors. The provisional list includes approximately 15 different cloud types ([Annex VI](#)).

5.4.5 It was noted that all donors would be required to sign a licensing agreement for their imagery and metadata, to ensure that WMO can freely use the material in the ICA. Mr Anderson tabled draft text for such an agreement ([Annex VII](#)), which has been approved for use (out of session) by WMO's Legal Officer.

5.5 Task 7 (Graphical Decision Aid)

5.5.1 The sub-group considering revision of the Graphical Decision Aid first transcribed the present decision aid for classifying low (CL), middle (CM) and high level clouds (CH) into flow-charts with yes/no answers and short descriptions accompanying each cloud. A small addition was the inclusion of two cartoons for CM2 (which can be either altostratus opacus or nimbostratus), though the coding will remain as in the current version. The first draft of the new decision aid is shown at [Annex VIII](#).

5.5.2 The group proposed that each cartoon in the new Aid be accompanied by a brief description, with its code and its corresponding symbol.

5.5.3 The group also proposed that the Task Team recommend in its final report to CIMO Management Group that WMO produce a poster (A1) of each of the three Graphical Decision Aid diagrams, for distribution to WMO Members.

5.5.4 The sub-group summarized its remaining work to come after the session as follows:

- check cartoons for suitability or offer specific changes (sub-group, and approval by whole TT);
- select reference images to go with the decision aids (in consultation with the Imagery sub-group);
- text of flow-charts to be approved by whole TT;
- create layout for paper-version (landscape), define functionality for web-version;
- create flow-charts for the 10 genera.

5.6 Task 8 (Web Design)

5.6.1 During the breakout sessions, Mr Trice and Mr Tam discussed separately the features and functionality to be included, if possible, in the design of the ICA website. In this way, Mr Trice was able to convey in more detail to Mr Tam, the new member of the team, the detailed appearance of the website that the Task Team had envisaged during the course of its earlier work.

6. STRATEGY AND OPTIONS FOR DEVELOPING AND HOSTING ICA WEBSITE

6.1.1 The session decided that, in view of the extensive discussion on this item that had taken place during the breakout groups, no further discussion was necessary at this stage. In summary, the Hong Kong Observatory (HKO) has offered to:

- Support the acquisition and sorting (on a dedicated website) of the images and metadata to be submitted as candidates for the new ICA, so that they can be easily assessed by the Image Sub-Group when the time comes, and
- Support the development of the new ICA on the web, once the design is completed and the material for it assembled.

6.1.2 HKO has also indicated that, once further details of the new ICA become available, it may further consider hosting the new ICA on the web, similar to its experience in hosting the WWIS and SWIC.

7. REVIEW AND REVISION OF WORK PLAN AND SCHEDULE

7.1 The session then revisited and revised its Work Plan ([Annex IX](#)) and the implied Project Schedule ([Annex X](#)), each updated to reflect the progress made during the session and the expectations for substantial completion of each of the tasks over the coming year.

8. DRAFT REPORT OF THE SESSION

8.1 The session agreed to finalize the report of the session by correspondence over the coming weeks.

9. CLOSURE OF THE SESSION

9.1 The session closed on Thursday 9 October 2014 at 15:32 hours.

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IMAGE ASSESSMENT: CURRENT ICA

Plate	Low Etage				Middle Etage				High Etage				Mother		Climate Zone					Season	Image Quality	Image Merit	Use	Comment	Edit metadata	Other meteor
	CL	Species	Variety	Supp'	CM	Species	Variety	Supp'	CH	Species	Variety	Supp'	Genitus	Mutatus	A: Equatori.	B: Arid	C: Warm Te	D: Snow	E: Polar							
3	Cu 1	hum							Ci 1	fib									Summer	VG	VG	Maybe	Good example of small rounded Cu hum			
4	Cu 1	hum hum &																	Spring	VG	VG	Maybe	Haze. Cu fra also present	Req'd		
5	Cu 1	fra med &																	Spring	G	VG	Maybe	Over exposed			
6	Cu 2	fra																	Spring	VG	VG	Maybe	Over exposed; good cold outbreak Cu			
7	Cu 2	con																	Autumn	VG	VG	Yes	Narrow gutted			
8	Cu 2	con			AcAc 7		du: tr & op							Dry						VG	VG	Maybe	Ac op???	Req'd		
9	Cu 2	con, med & fra																		Exc	VG	Maybe	Questionable id; Cb at 7?	Req'd		
10	Cu 2	con	pra		Ac 6								cugen						Autumn	G	VG	No				
11	Cu 2	con	pra		Ac 4	len	tr													Exc	Exc	Yes				
12	Cu 2	con	pra																Summer	Exc	Exc	Yes	Good example of high base; just short of Cb cal			
13	Cu 2	con			Ac 3		tr													VG	Exc	Yes	Questionable; is there no precip? Images too small; very difficult to ID pra, Ac & Ci	Req'd		
14	Cu 2	con	pra		Ac 4				Ci 2											G	VG	No		Req'd		
15	Cb 3	cal			Ac 6								cugen						Summer	VG	Exc	Yes	Not good example of Ac6			
16	Cb 3	cal			Ac 3								cugen						Autumn	Exc	Exc	Yes				
17	Cb 3	cal	pra & pan						Ci 3				cbgen							Exc	Exc	Yes	description of Ci3; evidence of Cirriform tops = Cb9; pannus? Check reference to cirriform top out of the picture	Req'd		
18	Cb 3	cal	pra						Ci 1				cugen							Exc	VG	Yes	Transitional cal to cap. No Ci3; change to Ci1. Sc len foreground?	Req'd	Lightning	
19	Cb 3	cal	pra						Ci 3				cugen					Spring	Exc	Exc	Yes	Incorrectly coded as Cb3; high based & small vertical extent	Req'd			
20	Cb 9	cap	pra										cugen					Autumn	Exc	Exc	Yes		Req'd			
21	Sc 4												cugen					Autumn	VG	Exc	Yes	Formed from Cu med				
22	Sc 4	str	un op										cugen					Summer	VG	Exc	Yes	Incorrectly ident' as Cu med; too much vertical extent at 2,3	Req'd			
23	Sc 4												cugen					Autumn	VG	Exc	Yes	Incorrectly ident' as Cu med; too much vertical extent at 2,3	Req'd			
24	Sc 5	str	un op															Summer	Exc	Exc	Yes					
25	Sc 5	str	tr															Winter	G	VG	No					
26	Sc 5	str	tr pe															Winter	G	VG	No	No horizon reference Sc is lower (or background?). Hard to find replacement image				
27	Sc 5	str	op	mam														Autumn	G	Exc	Maybe	Low light but great shot. Add op to metadata				
28	St 6	neb	un op		/				/									Summer	VG	Exc	Yes					

CIMO TT-ICA, ANNEX II, p. 2

Plate	Low Etage				Middle Etage				High Etage				Mother		Climate Zone					Season	Image Quality	Image Merit	Use	Comment	Edit metadata	Other meteor
	CL	Species	Variety	Supp'	CM	Species	Variety	Supp'	CH	Species	Variety	Supp'	Genitus	Mutatus	A: Equatori.	B: Arid	C: Warm Te	D: Snow	E: Polar							
29	St 6	neb	un op		/			/												Winter	G	VG	No	Too dark to ident. Toothills. Add op to metadata		
30	St 6	neb	un op		/			/												Autumn	B&W	VG	Maybe	Add St op to metadata		
31	St & Cu 7	fra		pan	As 2			/												Autumn	VG	VG	Maybe	Can't see any St fra?	Req'd	
32	St & Cu 7	fra		pan	/			/												Spring	VG	VG	No	"Probably below As". Too vague - looks to be Cu con lower left	Req'd	
33	St & Cu 7	fra		pan	Ns 2			/												Spring	P	G	No	Most unlikely looking Ns sky. Thunder showers in morning?		
34	CuSc 8																			Autumn	G	G	No	Seen many better examples		
35	CuSc 8	str	pe																	Summer	VG	G	No	Seen many better examples		
36	CuSc 8	len			/			/												Summer	VG	Exc	Maybe	Sc ten & nigner sc str op = du; interesting image	Req'd	
37	CuSc 8	str						Ci 1												Autumn	G	VG	Maybe	Too dark; seen better		
38	Cb 9	cap																			G	G	No	Error in metadata; Cb cap inc at 2 & Cb cal at 3. Seen many better	Req'd	
39	Cb 9	cap		vir inc pil & inc	Ac 6	str						cugen									VG	VG	Maybe	Seen many better examples. Add vir to description		
40	Cb 9	cap						Ci 3				cbgen									VG	Exc	Yes	2 images; revise metadata as 2nd image is predom' Cb cap inc	Req'd	
41	Cb 9	cap		inc				Ci 3				cbgen									VG	VG	Yes	Ci3? Features too distant; replace image.As?	Req'd	
42	Cb 9	cap		inc pra & arc	AcAs 7			Ci 3				cbgen									VG	VG	Maybe		Req'd	
43	Cb 9	cap			/			/												Autumn	P	VG	No	Poor image quality		
44	Cb 9				Ac 6															Summer	G	Exc	Maybe	With pg 45.		
45	Cb 9			mam	Ac 6															Summer	G	Exc	Maybe			
46	Cb 9	cap		pra mam & inc	Ac 4			Ci 3				cbgen								Summer	VG	Exc	Yes	Add pra	Req'd	
47	Cb 9	cap		& inc	/			/												Spring	VG	VG	No	Seen many better examples		
48	Cb 9	cap		& inc				Ci 3				cbgen								Spring	Exc	Exc	Yes			
49					As 1	tr		/												Winter	Exc	Exc	Yes			
50					As 1	tr		/												Autumn	VG	VG	No	Too little depth of field		
51	Cu 7	fra			As 1	tr		/												Spring	P	VG	No	Poor image quality		
52					Ns 2			/												Summer	P	P	No	Far too much definition for Ns. Too much light in foreground	Req'd	
53	St 7	fra			Ns 2			/												Winter	VG	VG	Yes			
54					Ns 2			/												Summer	G	VG	Maybe	Very few examples of less than ovc Ns		
55					Ns 2			/												Spring	B&W	VG	Maybe	Very low Ns; poor image quality		
56					Ac 3	tr														Winter	VG	VG	No	Questionable Ac3; more like Ac8 floccus	Req'd	
57					Ac 3	str tr pe														Spring	B&W	VG	No	Great example but many colour alternatives exist		

CIMO TT-ICA, ANNEX II, p. 3

Plate	Low Etage				Middle Etage				High Etage				Mother		Climate Zone					Season	Image Quality	Image Merit	Use	Comment	Edit metadata	Other meteor
	CL	Species	Variety	Supp'	CM	Species	Variety	Supp'	CH	Species	Variety	Supp'	Genitus	Mutatus	A: Equatori.	B: Arid	C: Warm Te	D: Snow	E: Polar							
58					Ac 3	str	tr pe													Summer	B&W	G	Maybe	Good example of varying thickness Ac3. Replace		
59	Cu 2	med			Ac 4	len	du		Ci 1	fib										Spring	VG	Exc	Yes	Link metadata to add duplicates to Ac 4 include Cu & Ci species	Req'd	
60	Sc 5				Ac 4	len	du		Cs 7											Winter	G	VG	No	Not enough contrast in the sky		
61					Ac 4	len	du ra													Summer	VG	Exc	Yes			
62	Sc 5				Ac 4	len	ra													Summer	VG	Exc	Yes	Add Ac tr to metadata	Req'd	
63	Sc 5				Ac 4	len	op		Ci 1											Winter	VG	Exc	Yes	Contra. Add Ac len op to metadata	Req'd	
64					Ac 4	len	ra													Summer	VG	G	Maybe	Add Ac tr to metadata	Req'd	
65					Ac 4	len			CiCs 6											Autumn	B&W	G	Maybe	Exc thin Cs but image is there for Ac4		
66	Sc 5				Ac 4	len														Autumn	B&W	G	No	Image quality too poor		
67					Ac 4	str	la													Autumn	B&W	Exc	Maybe	Very rare to find examples of Ac la		
68					Ac 5	str	pe un													Summer	G	VG	Maybe	No horizon reference		
69					Ac 5	str	tr un		Cs 8	neb										Winter	G	VG	No	Image has poor contrast and definition		
70					Ac 5	str	pe ra													Summer	B&W	VG	Maybe	Source alternative		
71	Cu 2	med			Ac 5	str	pe ra													Summer	B&W	G	No	Source alternative		
72	Cu 2	con			Ac 6							cugen								Summer	Exc	Exc	Yes			
73	Cu 2	con			Ac 6							cugen								Autumn	VG	Exc	Yes			
74	Cb 9	cap			Ac 6							cugen								Summer	G	VG	No	base of Cb2 within the horizon. Hmmm!	Req'd	
75	Sc 4	cas			Ac 7	str	op					cugen								Summer	G	Exc	Yes	Ac 7p (non-invasive) very rarely captured. Add Sc cas		
76					AcAs 7	str	du													Autumn	P	G	No	Source alternative		
77					AcAs 7		ra		/											Autumn	G	VG	No	Source alternative		
78					AcAs 7															Spring	B&W	G	No	Very poor quality		
79	Cu 2	con			Ac 8	cas														Autumn	VG	Exc	Yes	Check metadata where is the Ac? No reference to Ci1?	Req'd	
80					Ac 8	cas		vir	Ci 1											Summer	Exc	Exc	Yes	Brilliant image but is the Ac silky or diffuse? Are there any laminae, rounded	Req'd	
81					Ac 8	cas														Spring	VG	VG	Maybe	Numerous examples of Ac cas flo exist		
82					Ac 8	flo		vir												Summer	VG	VG	No	Hard to see all the detail, seen better examples		
83					Ac 8	flo														Summer	B&W	Exc	Maybe	Excellent example of Ac flo		
84					Ac 8	flo														Autumn	B&W	VG	No	suspect clouds? Or no, where is the shading?	Req'd	
85					Ac 8	cas														Summer	B&W	Exc	Maybe	Excellent example but lacking in image quality		
86	Cu 1	fra			Ac 9				Cs 8	un										Summer	G	VG	Maybe	Hard to find Ac9 images		

CIMO TT-ICA, ANNEX II, p. 4

Plate	Low Etage				Middle Etage				High Etage				Mother		Climate Zone					Season	Image Quality	Image Merit	Use	Comment	Edit metadata	Other meteor
	CL	Species	Variety	Supp'	CM	Species	Variety	Supp'	CH	Species	Variety	Supp'	Genitus	Mutatus	A: Equatori.	B: Arid	C: Warm Te	D: Snow	E: Polar							
87					Ac 9															Summer	G	G	No	Questionable Ac9 sky		
88	Cb 3	cal			Ac 9				Ci 2											Summer	B&W	Exc	Maybe	Very difficult to make out detail		
89									Ci 1	unc										Summer	Exc	VG	Maybe	Great example but too much foreground		
90	Sc 5								Ci 1	unc										Summer	G	VG	No	Not enough contrast in image		
91									Ci 1	unc										Winter	Exc	Exc	Yes	Cc top left; excellent image		
92									Ci 1	fib	ve									Autumn	B&W	Exc	Maybe	Excellent fibratus		
93	Cu 2	con							Ci 2	spl	vir									Autumn	Exc	Exc	Yes	Could be replaced by image with more depth of field	Req'd	
94									Ci 2	flo	vir									Autumn	VG	VG	Yes	Add virgo to metadata. Seen as good images.	Req'd	
95					As 1				Ci 2	flo										Winter	Exc	VG	Maybe	Banded As1? Prefer a higher sun image	Req'd	
96									Ci 2	flo										Summer	VG	Exc	Yes	Check metadata as ident. also cc no doubt that	Req'd	
97	Cu 2	con							Ci 3	spl		cbgen								Summer	Exc	Exc	Yes	Check Cu con at 4, 4 to ensure not Cb cal	Req'd	
98	Cb 9								Ci 3	spl		cbgen								Summer	Exc	Exc	Yes	And pg 55. Check images as I see no Cb cap; only Cu con	Req'd	
99	Cb 9								Ci 3	spl		cbgen								Summer	Exc	Exc	Yes			
100	Cu 2	con							Ci 3	spl		cbgen								Summer	G	VG	No	Not enough contrast		
101	Cb 9	cap		inc					Ci 3	spl		cbgen								Summer	VG	VG	No	Features too distant		
102	Cb 9								Ci 3	spl		cbgen								Summer	VG	VG	Maybe	Where is the Cb? Cumulogenitus?	Req'd	
103					As 2				Ci 4	unc										Autumn	Exc	VG	Maybe	incorrectly identified as Cb should be CiCs5.	Req'd	
104									Ci 4	unc	ra									Autumn	VG	Exc	Yes			
105									Ci 4	unc										Summer	Exc	Exc	Yes			
106									Ci 4	unc	ra									Winter	P	VG	No	Poor resolution		
107	St 7	fra							Ci 4	fib	du									Winter	VG	Exc	Maybe	What is obsc. the sun. Are there any "blue sky" gaps	Req'd	
108									CiCs5	unc										Summer	Exc	Exc	Yes			
109					AcAs 7				CiCs5	fib										Autumn	G	VG	No	Not enough definition		
110									Cs6											Autumn	VG	Exc	Yes			
111					Ac 3				CiCs 6	fib										Autumn	G	VG	Maybe	Not enough depth of field		
112									Cs 7	neb										Winter	Exc	Exc	Yes	Sensational		Parhelion
113	Cu 1	fra							Cs 7	fib										Summer	VG	VG	Maybe	Cs translucent; irregular curved filaments?	Req'd	22° halo
114									Cs 7	fib										Winter	P	VG	No	Source replacement		
115					Ac 8	cas un			Cs 8	fib										Summer	VG	VG	Yes			

CIMO TT-ICA, ANNEX II, p. 5

Plate	Low Etage				Middle Etage				High Etage				Mother		Climate Zone					Season	Image Quality	Image Merit	Use	Comment	Edit metadata	Other meteor	
	CL	Species	Variety	Supp'	CM	Species	Variety	Supp'	CH	Species	Variety	Supp'	Genitus	Mutatus	A: Equatori.	B: Arid	C: Warm Te	D: Snow	E: Polar								
116	Cu 2	con							Cs 8	neb										Spring	B&W	VG	Maybe	Cs neb images hard to find			
117	Cu 2	con							Cc 9	str	un									Summer	B&W	Exc	Maybe	Excellent example; hard to better			
118									Cc 9	str	la									Spring	G	Exc	Maybe	seek replacement but will be very hard to find			
119									Cc 9	str	un la									Summer	VG	Exc	Yes	Horizon reference would help			
120									Cc 9	len										Summer	B&W	Exc	Maybe	Needs horizon and more depth of field, seek replacement			
Orographic																											
123	Sc 5	len cas			Ac 4	len tr														Summer	Exc	Exc	Yes	Add Sc cas	Req'd	Kelvin H w	
124	Sc 5				Ac 4	len			Ci 1	fib											B&W	VG	No	Image quality too poor - volcano Sumbing	Req'd		
125	Cu 1	fra																		Spring	VG	VG	Yes	What - Cu1 fra?	Req'd		
126	Cu 1	fra			Ac 4	len tr														Winter	G	Exc	Yes	Needs more contrast; check for Sc len	Req'd		
127	CuSc 8	len			Ac 4	len														Autumn	VG	Exc	Yes				
128	Cu 1	fra			As 2	len														Winter	VG	VG	Maybe	Ac len or As len? Cu fra or Sc?	Req'd		
129	CuSc 8	len							Cs 7											Autumn	VG	Exc	Yes	Multi levels of len, not an Sc. Review metadata, the overcast is not Cs	Req'd		
130	Cu 1	hum			Ac 4															Summer	VG	VG	Maybe				
Aircraft																											
133									Ci 1	unc										Winter	Exc	G	No				
134					Ac 7															Summer	VG	G	Yes	Cu con penetrating Ac			
135					Ac 4	len du														Summer	Exc	G	Yes				
136					Ac 4	len du														Winter	VG	G	Maybe	Thin As at 1?			
137					Ac 4	len			Cs 8											Spring	Exc	G	Yes	Classic but b & w, dust storm and dust wall present			
138	Cb 3	cal																		Autumn	Exc	G	Yes				
139					As 2								cbgen							Autumn	Exc	G	Yes				
140	Sc 5	str	op																	Winter	VG	G	Yes				
141	Sc 5	str	du		As 2	op														Spring	Exc	G	Yes				
142	Sc 5		tr		Ac 3															Winter	VG	P	No				
143	Sc 5	str			As 2															Spring	VG	P	No	Roll cloud			
144	Sc 5	len	du																	Winter	VG	VG	Yes				
145	Sc 5	str	tr pe																	Autumn	VG	G	Yes				

CIMO TT-ICA, ANNEX II, p. 7

Plate	Lithometeors	Description	Climate Zone					Use	Comment
			A	B	C	D	E		
194	Haze	3 images						Keep	Enlarge and check quality
	Dust haze								
195	Smoke							Replace	Low smoke and very high haze; poor quality image
196a	Drifting dust or sand	Drifting sand on beach						Replace	Macro image taken at ground level; poor quality image
	Blowing dust or sand								
	Dust storm								
	Sandstorm								
196b	Wall of dust or sand							Keep	Can we source original?
197	Dust whirl or sand whirl (dust devil)							Keep	

Plate	Photometeors	Description	Climate Zone					Use	Comment
			A	B	C	D	E		
113	Solar halo 22°							Keep	
198	Solar halo 22°							Replace	Cs neb. Poor image quality
199	Solar halo 22°	Sensational						Keep	Cs neb
	Solar halo 46°								
	Lunar halo 46°								
200	Solar corona							Replace	Poor image quality
	Lunar corona								
201	Irisation							Replace	B & W; can't identify irisation
202	Glory	2 images						Replace	Poor image quality
203	Rainbow							Replace	Exc Cb cal but poor rainbow
204	Crepuscular rays	2 images						Replace	Great examples but poor quality images

Plate	Electrometeor	Use	Comment
118	Lightning	Keep	
205	Lightning	Keep	
	Saint Elmo's fire		
206	Polar aurora	Keep	Borealis

IMAGE NEEDS: REVISED ICA
A: LOW ETAGE

Genera	Species	Variety	Suppl'	Genitus	Mutatus	Cl.	Equatorial	Arid	Warm temperate	Snow	Polar	# accepted	# rejected	Comment	Need	Minimum # needed	
Cu	Cu fra					1						0	0	All zones	5		
	Cu fra					7			0/3			0	3	Any zone	1		
	Cu hum					1		0/1	0/1	0/1		0	3	All zones	5		
	Cu med					2			0/1			0	1	All zones	5		
	Cu con					2	3/5	1/1	1/2			5	3	D and E	2		
Cu		Cu rad										0	0	Any zone	1		
			Cu pil									0	0	Any zone	1		
			Cu vel									0	0	Any zone	1		
			Cu vir									0	0	Any zone	1		
			Cu pra				1/2	1/1	0/1			2	2	C and D or E	2		
			Cu arc									0	0	Any zone	1		
			Cu pan						0/3			0	3	Any zone	1		
			Cu tub				2	1/1				1	0	191	Any zone	1	
				Cu acgen								0	0	Any zone	1		
				Cu scgen								0	0	Any zone	1		
					Cu scmut							0	0	Any zone	1		
					Cu stmut							0	0	Any zone	1		
	Cb	Cb cal					3	2/2	1/1	2/2	1/1		6	0	203	B, D and E	3
		Cb cap					9	2/5		1/5	2/2		5	7	B and C	2	
				Cb pra				2/2		1/2	3/3		6	1	B and C	2	
			Cb vir				0/1					0	1	A, B, C and D	4		
			Cb pan									0	0	Any zone	1		
			Cb inc			9	4/5			1/1		5	1	B, C, D and E	4		
			Cb mam						1/3			1	2	Any zone	1		
			Cb pil				1/1					1	0	Any zone	1		
			Cb vel									0	0	Any zone	1		
			Cb arc						0/1			0	1	Any zone	1		
			Cb tu				2/2		1/1	1/1		4	0	Any zone	1		
				Cb acgen								0	0	Any zone	1		
				Cb asgen								0	0	Any zone	1		
				Cb nsgen								0	0	Any zone	1		
				Cb scgen								0	0	Any zone	1		
			Cb cugen								0	0	Any zone	1			
				Cb cumut							0	0	Any zone	1			
St	St neb					6		0/1	0/1		1/1	1	2	Any zone	1		
	St fra					6						0	0	Any zone	1		
	St fra					7			0/3			0	3	Any zone	1		
			St op					0/1	0/1		1/1	1	2	Any zone	1		
			St tr									0	0	Any zone	1		
			St un									0	0	Any zone	1		
				St pra								0	0	Any zone	1		
					St nsgen							0	0	Any zone	1		
					St cugen							0	0	Any zone	1		
					St cbgen							0	0	Any zone	1		
					Sc scmut						0	0	Any zone	1			
Sc	Sc str							0/2	0/1	1/1	1	3	Any zone	1			

Low etage

Genera	Species	Variety	Suppl'	Genitus	Mutatus	Ci.	Equatorial	Arid	Warm temperate	Snow	Polar	# accepted	# rejected	Comment	Need	Minimum # needed
	Sc len								2/2			2	0	123 &	Any zone	1
	Sc cas									1/1		1	0	pl 75	Any zone	1
		Sc tr							0/2			0	2		Any zone	1
		Sc pe							0/1			0	1		Any zone	1
		Sc op								1/2	1/1	2	1		Any zone	1
		Sc du										0	0		Any zone	1
		Sc un							1/1	1/1		2	0		Any zone	1
		Sc ra										0	0		Any zone	1
		Sc la										0	0		Any zone	1
			Sc mam							0/1		0	1		Any zone	1
			Sc vir									0	0		Any zone	1
			Sc pra									0	0		Any zone	1
				Sc cugen		4			2/2	1/1		3	0			
				Sc cbgen								0	0		Any zone	1
				Sc asgen								0	0		Any zone	1
				Sc nsgen								0	0		Any zone	1
					Sc acmut							0	0		Any zone	1
					Sc nsmut							0	0		Any zone	1
					Sc stmut							0	0		Any zone	1
							18	3	12	12	4	49				88

B: MIDDLE ETAGE

		Genera	Species	Variety	Suppl'	Genitus	Mutatus	C _M	Equatorial	Arid	Warm temperate	Snow	Polar	# accepted	# rejected	Need	Minimum # needed	
Middle etage	As		As tr					1			1/5			1	4	All zones	5	
			As op					2						0	0	All zones	5	
			As du											0	0	Any zone	1	
			As un								0/1			0	1	Any zone	1	
			As ra								0/1			0	1	Any zone	1	
						AS acgen								0	0	Any zone	1	
						As cbgen								0	0	A, B, C and D	4	
							As csmut							0	0	Any zone	1	
							As nsmut							0	0	Any zone	1	
		Ns							2	0/1	1/2	0/1			1	4	All zones	5
				Ns pra					2						0	0	Any zone	1
				Ns vir					2						0	0	Any zone	1
				Ns pan					2						0	0	Any zone	1
						Ns cugen									0	0	Any zone	1
						Ns cbgen									0	0	Any zone	1
							Ns acmut								0	0	Any zone	1
							Ns asmut								0	0	Any zone	1
							Ns scmut		2						0	0	Any zone	1
		Ac	Ac str							0/1	0/7	1/1			1	8	Any zone	1
			Ac len						4	0/1	1/2	1/3	2/3		4	5		1
			Ac cas						8		1/1	1/3	1/1		3	2		1
			Ac flo						8			0/3	0/1		0	4	Any zone	1
				Ac tr					3	0/1	2/8	1/2			3	7		1
				Ac pe							0/3				0	3	Any zone	1
				Ac op						0/1	1/1	1/1			2	1	Any zone	1
				Ac du						0/1	0/1	1/1	1/1		2	2	Any zone	1
				Ac un								0/5	1/2		1	6	Any zone	1
				Ac ra								1/4	1/2		2	6	Any zone	1
			Ac la							0/1				0	1	Any zone	1	
				Ac vir								1/2		1	1	Any zone	1	
				Ac mam										0	0	Any zone	1	

Genera	Species	Variety	Suppl'	Genitus	Mutatus	C _M	Equatorial	Arid	Warm temperate	Snow	Polar	# accepted	# rejected	Need	Minimum # needed
				Ac cugen					1/2		1/1	2	1	Any zone	1
				Ac cbgen								0	0	Any zone	1
					Ac cimut							0	0	Any zone	1
					Ac asmut							0	0	Any zone	1
					Ac nsmut							0	0	Any zone	1
					Ac scmut							0	0	Any zone	1
							0	3	9	2	9	23			52

C: HIGH ETAGE

														Equatorial	Arid	Warm temperate	Snow	Polar	# accepted	# rejected	Comment	Need	Minimum # needed
Genera	Species	Variety	Suppl'	Genitus	Mutatus	C _H																	
High etage	Ci	Ci fib				1 or 4		0/1	0/2	1/6			1	8		Any zone	1						
		Ci unc				1 or 4		0/2	2/4	1/1	1/1		4	4		Any zone	1						
		Ci spi				2 or 3		2/2	1/3	1/2			4	3		Any zone	1						
		Ci cas				2							0	0		Any zone	1						
		Ci flo				2		1/2	1/1				2	1		Any zone	1						
			Ci in										0	0		Any zone	1						
			Ci ra						1/2				1	1		Any zone	1						
			Ci ve						0/1				0	1		Any zone	1						
			Ci du						0/1				0	1		Any zone	1						
				Ci mam									0	0		Any zone	1						
					Ci ccgen								0	0		Any zone	1						
					Ci acgen								0	0		Any zone	1						
					Ci cbgen		3	2/2	1/3	0/1			3	3		& zone D	1						
						Ci csmut							0	0		Any zone	1						
		Cc	Cc str							0/2	1/1		1	2		Any zone	1						
			Cc len							0/1			0	0		Any zone	1						
			Cc cas										0	0		Any zone	1						
			Cc flo										0	0		Any zone	1						
				Cc un						0/1	1/1		1	0		Any zone	1						
				Cc la						0/1	1/1		1	0		Any zone	1						
				Cc vir								0	0		Any zone	1							
				Cc mam								0	0		Any zone	1							
					Cc cimut							0	0		Any zone	1							
					Cc csmut							0	0		Any zone	1							
					Cc acmut							0	0		Any zone	1							
	Cs	Cs fib						0/1	1/3	0/1		1	4		Any zone	1							
		Cs neb						0/1	0/1	1/1		1	3	pl 198, 199	Must include a zone D	2							
			Cs du									0	0		Any zone	1							
			Cs un									0	0		Any zone	1							
				Ci ccgen								0	0		Any zone	1							
				Ci cbgen								0	0		Any zone	1							
					Cs cimut							0	0		Any zone	1							
					Cs ccmut							0	0		Any zone	1							
					Cs asmut							0	0		Any zone	1							
								4	3	7	4	1	19				35						

DRAFT LIST OF MANDATORY AND SUPPLEMENTARY METADATA**Compulsory Metadata**

Name of photographer: e.g. M. Mhin,

Location: e.g. Paris (France), lat, long (still need to agree format e.g. ° and minutes or ° and decimal).

Date: e.g. 3 April 1948,

Local time: e.g. 0901 hours

Accompanying descriptions: N.B. this is compulsory in that it must accompany each image, but it will not be compulsory for the submitter to provide because the TT could produce this (for a limited number of images).

Time lapse metadata (for movies and time-lapse photography only) : Time Start (HHMM), Time Stop (HHMM), Interval between photos or frame rate per second.

Supplementary Metadata

Photographic metadata: e.g. wide angle shot or zoomed

Direction photograph is taken: e.g. towards SE (this has been moved from compulsory).

Surface air temperature:

Surface dewpoint or humidity:

Atmospheric Stability and or Indices:

Cloud Base: e.g. estimated at 2000 FT, measured at 1800 FT from LCBR trace.

Climatic Zone: simplified so that image submitters can specify.

Ground based remote sensing imagery

Satellite based remote sensing imagery

Aerological soundings

Synoptic chart

Additional Imagery

Reference Imagery

Video/Time lapse Imagery

Other

Search Metadata

Climatic Region

Cloud Genera

Cloud Species

Cloud Variety

Cloud Supplementary Feature

Low Clouds

Medium Level Clouds

High Clouds

Season

Country (?)

Photometeor

Hydrometeor

Electrometeor

Anthropogenic Cloud

Parent Cloud

Local Cloud (Y/N)

Time Lapse Photography

Stratospheric/Mesospheric clouds

DRAFT GLOSSARY

Alpine region – A mountainous region

Appellation – a name or title. (e.g. cirrus spissatus replaced the appellations cirrus densus and cirrus twthus).

Anvil – the horizontally extended upper part of a cumulonimbus cloud: "anvil clouds"

Anthropogenic - the influence of human beings on nature.

Anvil Crawler - [Slang], a lightning discharge occurring within the anvil of a thunderstorm, characterized by one or more channels that appear to crawl along the underside of the anvil. They typically appear during the weakening or dissipating stage of the parent thunderstorm, or during an active MCS (mesoscale convective system).

Anvil Dome - A large overshooting top or penetrating top.

Anvil Rollover - [Slang], a circular or semicircular lip of clouds along the underside of the upwind part of a back-sheared anvil, indicating rapid expansion of the anvil. See cumuliform anvil, knuckles, mushroom.

Anvil Zits - [Slang], frequent (often continuous or nearly continuous), localized lightning discharges occurring from within a thunderstorm

Back-sheared Anvil - [Slang], a thunderstorm anvil which spreads upwind, against the flow aloft. A back-sheared anvil often implies a very strong updraft and a high severe weather potential

Barber Pole - [Slang], a thunderstorm updraft with a visual appearance including cloud striations that are curved in a manner similar to the stripes of a barber pole. The structure typically is most pronounced on the leading edge of the updraft, while drier air from the rear flank downdraft often erodes the clouds on the trailing side of the updraft.

Bear's Cage - [Slang], a region of storm-scale rotation, in a thunderstorm, which is wrapped in heavy precipitation. This area often coincides with a radar hook echo and/or mesocyclone, especially one associated with an HP storm.

Beaver('s) Tail - [Slang], a particular type of inflow band with a relatively broad, flat appearance suggestive of a beaver's tail. It is attached to a supercell's general updraft and is oriented roughly parallel to the pseudo-warm front, i.e., usually east to west or southeast to northwest. As with any inflow band, cloud elements move toward the updraft, i.e., toward the west or northwest. Its size and shape change as the strength of the inflow changes. See also inflow stinger.

Cell - Convection in the form of a single updraft, downdraft, or updraft/downdraft couplet, typically seen as a vertical dome or tower as in a cumulus or towering cumulus cloud. A typical thunderstorm consists of several cells (see multi-cellular thunderstorm).

Clear Slot - A local region of clearing skies or reduced cloud cover, indicating an intrusion of drier air; often seen as a bright area with higher cloud bases on the west or southwest side of a wall cloud. A clear slot is believed to be a visual indication of a rear flank downdraft.

Cloud Streets - Rows of cumulus or cumulus-type clouds aligned parallel to the low-level flow. Cloud streets sometimes can be seen from the ground, but are seen best on satellite photographs.

Cloud Tags - Ragged, detached cloud fragments; fractus or scud.

Collar Cloud - A generally circular ring of cloud, that may be observed on rare occasions, surrounding the upper part of a wall cloud. See Fig. 7, supercell.

Comma Cloud - A synoptic scale cloud pattern with a characteristic comma-like shape, often seen on satellite photographs associated with large and intense low-pressure systems.

Crenelated - In the shape of castles or battlements. (e.g. used to describe the species Castellanus).

Cumuliform Anvil - A thunderstorm anvil with visual characteristics resembling cumulus-type clouds (rather than the more typical fibrous appearance associated with cirrus). A cumuliform anvil arises from rapid spreading of a thunderstorm updraft, and thus implies a very strong updraft. See anvil rollover, knuckles, mushroom.

Debris Cloud - A rotating "cloud" of dust or debris, near or on the ground, often appearing beneath a condensation funnel and surrounding the base of a tornado.

Diffuse – not clear cut or sharp (, e.g. used to describe the base of a nimbostratus cloud).

Feeder Bands - Lines or bands of low-level clouds that move (feed) into the updraft region of a thunderstorm, usually from the east through south (i.e., parallel to the inflow). Same as inflow bands.

Fleecy – a white and fluffy appearance. (e.g. cumulus clouds in unstable air.)

Granular cloudlets – cloud with elements resembling small grains or particles. (e.g. a cirrocumulus cloud).

Gustnado (or Gustinado) - [Slang], gust front tornado. A small tornado, usually weak and short-lived, that occurs along the gust front of a thunderstorm. Often it is visible only as a debris cloud or dust whirl near the ground. Gustnadoes are not associated with storm-scale rotation (i.e. mesocyclones); they are more likely to be associated visually with a shelf cloud than with a wall cloud.

Inflow Stinger - A beaver tail cloud with a stinger-like shape.

Knuckles - [Slang], lumpy protrusions on the edges, and sometimes the underside, of a thunderstorm anvil. They usually appear on the upwind side of a back-sheared anvil, and indicate rapid expansion of the anvil due to the presence of a very strong updraft. They are not mammatus clouds. See also cumuliform anvil, anvil rollover.

Lamina(e) - A thin plate, sheet, or layer. (e.g. used to describe the elements of an Altopcumulus cloud)

Laminar - Smooth, non-turbulent. Often used to describe cloud formations which appear to be shaped by a smooth flow of air traveling in parallel layers or sheets.

Landspout - [Slang], a tornado that does not arise from organized storm-scale rotation and therefore is not associated with a wall cloud (visually) or a mesocyclone (on radar). Landspouts typically are observed beneath Cbs or towering cumulus clouds (often as no more than a dust whirl), and essentially are the land-based equivalents of waterspouts.

Levanter cloud - cloud that forms over the Rock of Gibraltar..

Mammatus Clouds - Rounded, smooth, sack-like protrusions hanging from the underside of a cloud (usually a thunderstorm anvil). Mammatus clouds often accompany severe thunderstorms, but do not produce severe weather; they may accompany non-severe storms as well.

Mamillated – having relatively small protrusions from the surface (e.g as seen in the under surface of an Altostratus cloud).

Morning Glory - An elongated cloud band, visually similar to a roll cloud, usually they appear in the morning hours, when the atmosphere is relatively stable. Morning glories result from perturbations related to gravitational waves in a stable boundary layer. They are similar to ripples on a water surface; several parallel morning glories often can be seen propagating in the same direction.

Mushroom - [Slang], a thunderstorm with a well-defined anvil rollover, and thus having a visual appearance resembling a mushroom.

Orphan Anvil - [Slang], an anvil from a dissipated thunderstorm, below which no other clouds remain.

Overshooting Top (Penetrating Top) - A dome-like protrusion above a thunderstorm anvil, representing a very strong updraft and hence a higher potential for severe weather with that storm. A persistent and/or large overshooting top (anvil dome) often is present on a supercell. A short-lived overshooting top, or one that forms and dissipates in cycles, may indicate the presence of a pulse storm or a cyclic storm.

Protuberances – a bulge, knob or something that protrudes (, e. g found at tops of cumulus clouds or at the undersurface of cumulonimbus clouds).

Pulse Storm - A thunderstorm within which a brief period (pulse) of strong updraft occurs, during and immediately after which the storm produces a short episode of severe weather. These storms generally are not tornado producers, but often produce large hail and/or damaging winds. See overshooting top, cyclic storm.

Rain Foot - [Slang], a horizontal bulging near the surface in a precipitation shaft, forming a foot-shaped prominence. It is a visual indication of a wet microburst.

Rain-free Base - A dark, horizontal cloud base with no visible precipitation beneath it. It typically marks the location of the thunderstorm updraft. Tornadoes may develop from wall clouds attached to the rain-free base, or from the rain-free base itself - especially when the rain-free base is on the south or southwest side of the main precipitation area.

Roll Cloud - A low, horizontal tube-shaped arcus cloud associated with a thunderstorm gust front (or sometimes with a cold front). Roll clouds are relatively rare; they are completely detached from

the thunderstorm base or other cloud features, thus differentiating them from the more familiar shelf clouds. Roll clouds usually appear to be "rolling" about a horizontal axis, but should not be confused with funnel clouds.

Scud (or Fractus) - Small, ragged, low cloud fragments that are unattached to a larger cloud base and often seen with and behind cold fronts and thunderstorm gust fronts. Such clouds generally are associated with cool moist air, such as thunderstorm outflow.

Shelf Cloud - A low, horizontal wedge-shaped arcus cloud, associated with a thunderstorm gust front (or occasionally with a cold front, even in the absence of thunderstorms). Unlike the roll cloud, the shelf cloud is attached to the base of the parent cloud above it (usually a thunderstorm). Rising cloud motion often can be seen in the leading (outer) part of the shelf cloud, while the underside often appears turbulent, boiling, and wind-torn.

Sproutings – growths occurring at the upper surface of a cloud layer (, e.g. found at tops of cumulus clouds).

Striations - Grooves or channels in cloud formations, arranged parallel to the flow of air and therefore depicting the airflow relative to the parent cloud. Striations often reveal the presence of rotation, as in the barber pole or "corkscrew" effect often observed with the rotating updraft of an LP storm.

Subjacent – located beneath or below, underlying

Supercell - A thunderstorm with a persistent rotating updraft. Supercells are rare, but are responsible for a remarkably high percentage of severe weather events - especially tornadoes, extremely large hail and damaging straight-line winds. They frequently travel to the right of the main environmental winds (i.e., they are right movers). Radar characteristics often (but not always) include a hook or pendant, bounded weak echo region (BWER), V-notch, mesocyclone, and sometimes a TVS. Visual characteristics often include a rain-free base (with or without a wall cloud), tail cloud, flanking line, overshooting top, and back-sheared anvil, all of which normally are observed in or near the right rear or southwest part of the storm

Tabular-shaped – Shape like a table in terms of columns and rows

Tail Cloud - A horizontal, tail-shaped cloud (not a funnel cloud) at low levels extending from the precipitation cascade region of a supercell toward the wall cloud (i.e., it usually is observed extending from the wall cloud toward the north or northeast). The base of the tail cloud is about the same as that of the wall cloud. Cloud motion in the tail cloud is away from the precipitation and toward the wall cloud, with rapid upward motion often observed near the junction of the tail and wall clouds

Tessellation – pattern of the cover of a flat surface using one or more geometric shapes, called tiles, with no overlaps and no gaps.(e.g used to describe the regularly arranged elements of an Altocumulus Cloud).

Transpierce - to penetrate or pierce through (e.g. rising Cumulus penetrating a layer of Stratocumulus above).

Turkey Tower -[Slang], a narrow, individual cloud [tower](#) that develops and falls apart rapidly. The sudden development of turkey towers from small [cumulus](#) clouds may signify the breaking of a [cap](#).

Undulatory - to have a wavelike appearance, outline, or form.(e.g as seen in the species Undulatus)..

DRAFT LIST OF CLOUD TYPES REQUIRING TIME-LAPSE IMAGERY

1. Mutatus
 - a. Cu - Sc4
 - b. Cu - Ac6
 - c. Cu - Cb3 - Cb9
 - d. Cu - Ac6
 - e. Cb - As - even Ns
 - f. Cb - Ci - Cs
 - g. Ci - Cs - As - Ns
2. Ci and/or Cs formed by contrail (longevity and/or spreading)
3. Lenticular and standing waves
4. Cirrocumulus/cirrostratus ?
5. Classic mid latitude frontal approach (warm and cold frontal - cold frontal covered in 1g.)
6. Asperatus
7. Fallstreak holes
8. Stratospheric/mesospheric clouds
9. Severe convective clouds (wall, shelf, funnel, arcus)
10. Roll clouds

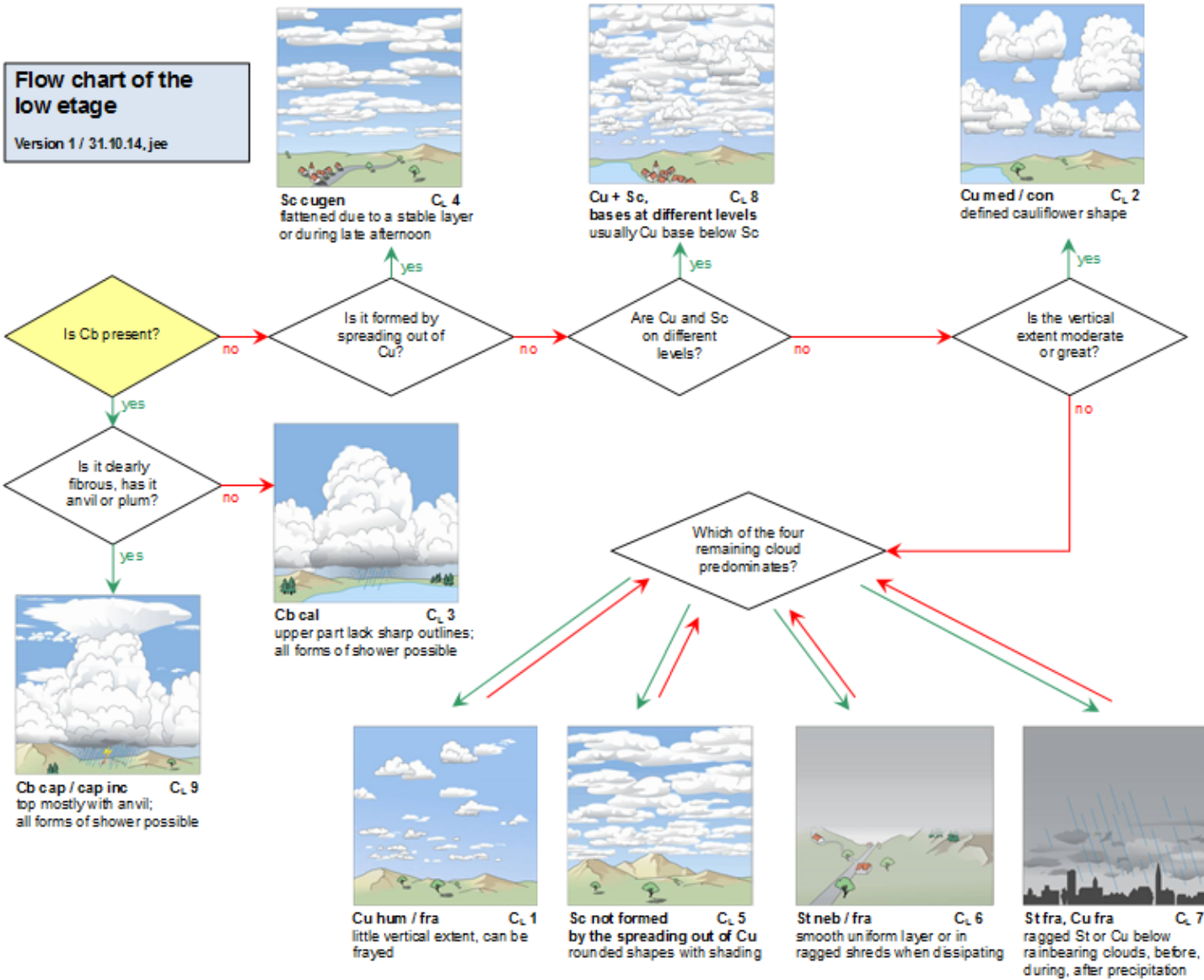
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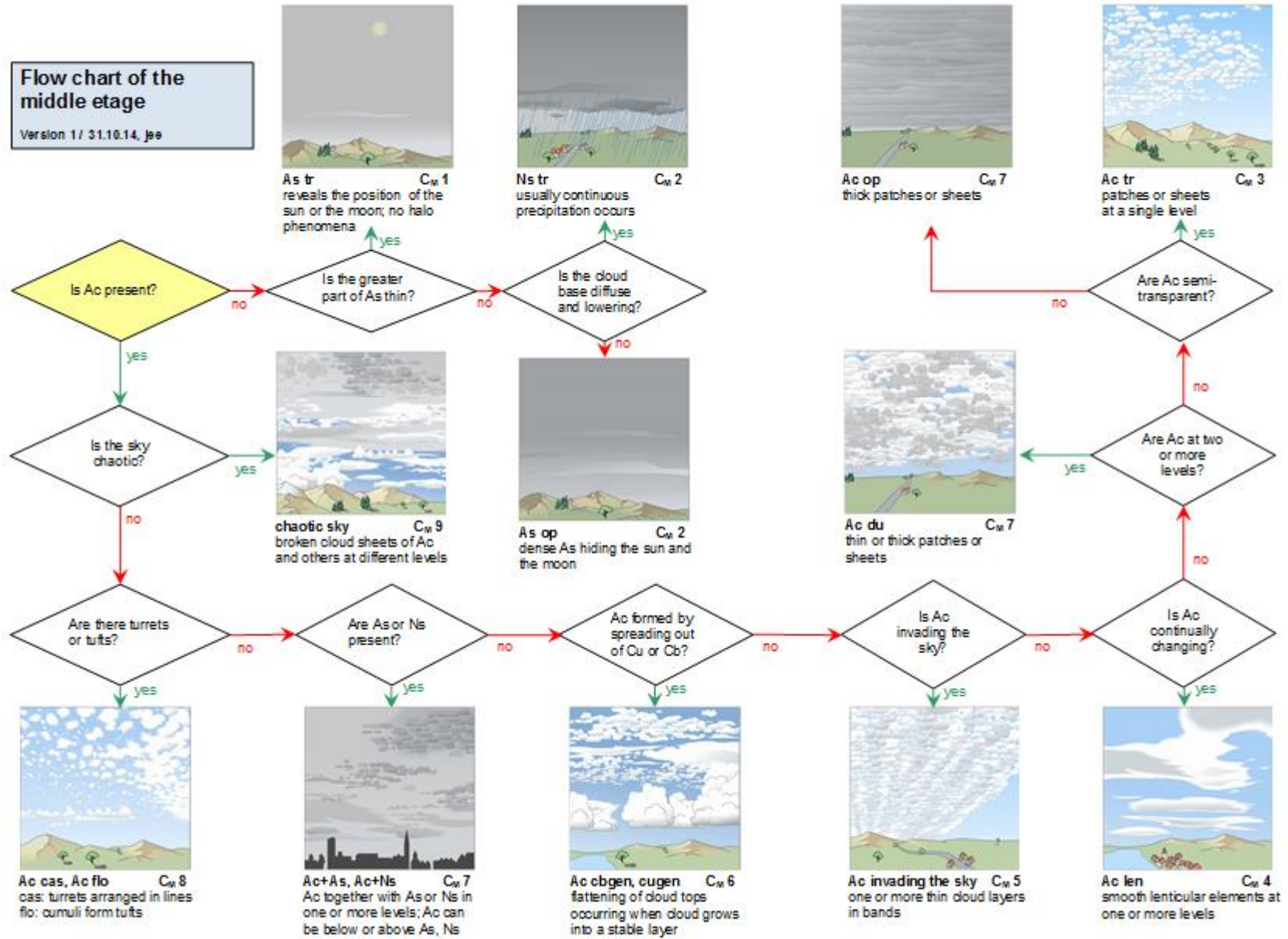
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DRAFT REVISED CLOUD IDENTIFICATION DECISION AID

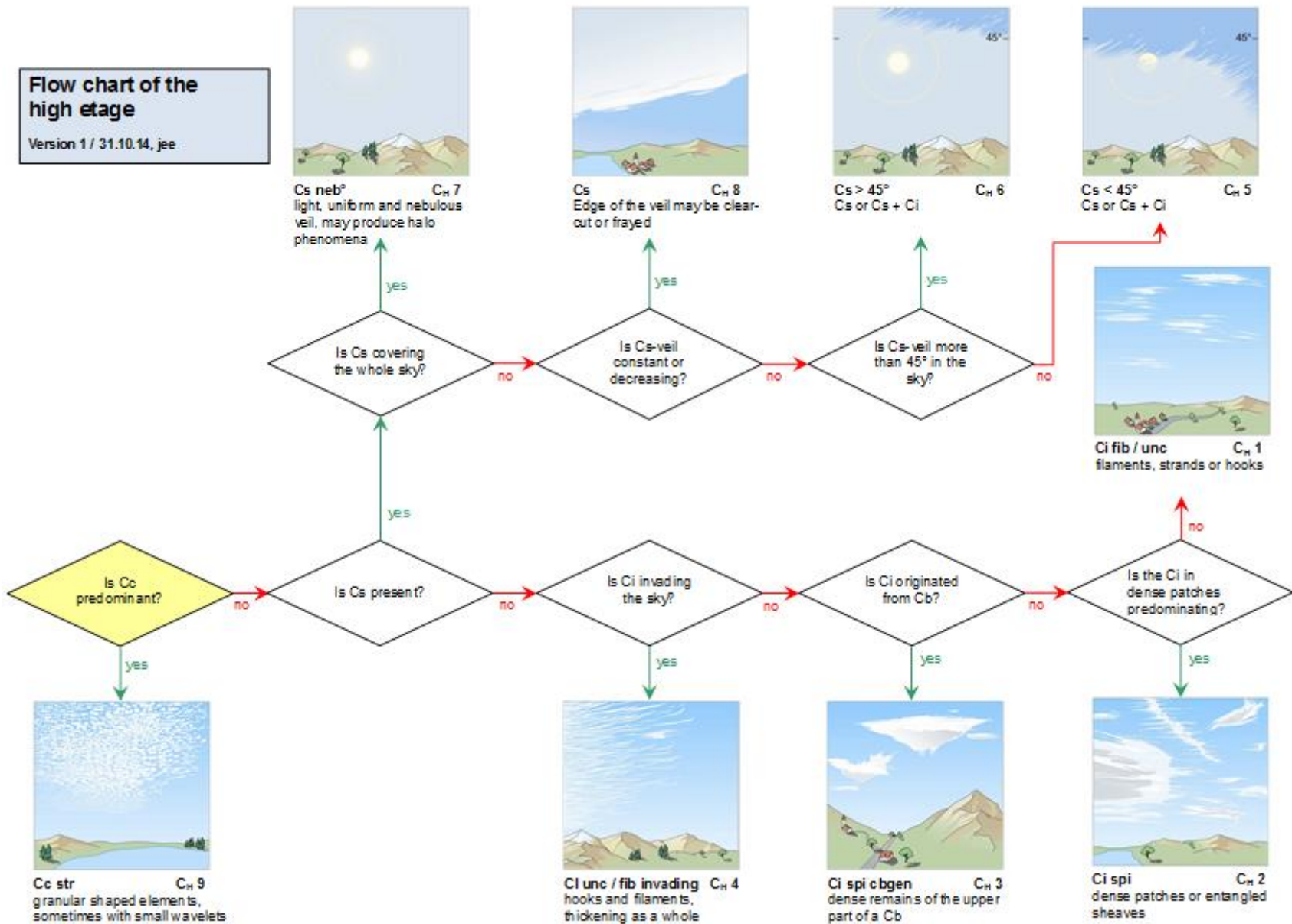


Flow chart of the middle etage
Version 1 / 31.10.14, Jee



Flow chart of the high étage

Version 1 / 31.10.14, jee



TT-ICA: DRAFT WORK PLAN

(Updated 9 Oct 2014)

No.	Task description	Person responsible	Action	Deliverable	Deadline for deliv.	Status [%]	Comments
1.	Establish sub-groups as required (text experts, image experts, decision aid) and prepare detailed plan of action	All, Steve, Mike	1. Develop project plan 2. Continuous review.	1. Detailed Project Plan 2. Refinement of plan.	1.Sep 2014, then 2. ongoing	100 50	CIMO-16 4.35-36
2.	Identify needs for new/replacement imagery and metadata. Generate a list of images and metadata required	Image Expert Sub-Group: Mike (lead) , George, Jim, (may need others)	1. Review imagery 2. Prepare list of required images and metadata	1. List of the needs for new/replacements imagery and metadata	1. Oct 2014 2. Oct 2014	100 50	
3.	Draft the new Glossary	Text Expert Sub-Group - Glossary: Ernest (lead Glossary) , Colleen, Steve (eg NSSL liaison), others	1. Prepare List 2. Add definitions	1. List 2. Glossary of terms	1. 80% Dec 2014 2. 100% Apr 2015	70 0	
4.	Review, revise and update text	Text Expert Sub-Group: Colleen (lead) , George, Ernest, Steve, need others	1. Review 2. Revise/update	2. Completed text	1. Oct 2014 2. 80% Mar 2015	100 10	
5.	Acquire and sort candidate imagery	Secretariat, Tam , Jim	1. Build and test web portal 2. Request submissions 3. Sort Images/Metadata	1. Test portal ready for testing. 2. Live portal built, debugged. 3. Letter to PRs etc 4. Full set of candidate images and metadata online	1. Dec 2014 2. Feb 2015 3. Feb 2015 4. 50% Apr 2015	0 0	
6.	Select Imagery	Image Expert Sub-	1. Select images for ICA	1. Imagery Set	1. Sep 2015	0	

No.	Task description	Person responsible	Action	Deliverable	Deadline for deliv.	Status [%]	Comments
		Group	2. Assemble associated metadata 3. Compose descriptions/captions 4. Get second opinion on imagery and metadata	2. Associated metadata 3. Complete information in place for each image	2. Nov 2015 3. Nov 2015 4. Nov 2015		
7.	Create an updated Cloud Coding Decision Aid and develop a simplified Cloud Classification Decision Aid (limited to identifying genera) for Volume I	Decision Aid Sub-Group: Eliane (lead) , Colleen, Marines, Ernest	1. Develop Decision/Coding Aid 2. Develop simplified Identification Aid	1. Updated Cloud Coding Decision Aid and Cloud 2. Classification Decision Aid	1. 80% Dec 2014 2. 80% Feb 2015	80 10	
8.	Design all aspects of the web-based ICA, including the Image Template, all desired functionality, the final formats needed (e.g. various printable subsets), and search requirements	Jim (lead) , Tam	1. Do it. 2. Confirm compliance with WMO website design requirements	1. Website design.	1. Sep 2015	20	
9.	Build the website	Tam (lead), Jim	1. Do it 2. Quantify the cost of operating/maintain the website once operational.	2. Fully functional (offline, empty) website	1. Nov 2015	0	
10.	Prepare all text, images and metadata for web format and populate the website	??? Secretariat		1. ICA assembled (not yet operational)	31 Dec 2015	0	
11.	Complete web site functionality			1. Fully functional website			
12.	Final proof-read, error correction, and approval			1. Errors/bugs removed			
13.	Publication			ICA published on web ICA hard copy available			

PROJECT SCHEDULE

Task Name	Q4			Q1			Q2			Q3			Q4			Q1			Q2		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1 Phase 1																					
2 1: Prepare detailed plan																			1: Prepare detailed plan		
3 Team meeting - Webex #1																			Team meeting - Webex #1		
4 Refresh/review progress to date																			Refresh/review progress to date		
5 Refine/improve plan of action																			Refine/improve plan of action		
6 Assignment of tasks and task leaders																			Assignment of tasks and task leaders		
7 Possible Team meeting - Webex #2																			Possible Team meeting - Webex #2		
8 Team meeting - Geneva																			Team meeting - Geneva		
9 Discuss and finalise project plan																			Discuss and finalise project plan		
10 Task team meetings and reports on progress																			Task team meetings and reports on progress		
11 Confirm new cloud classifications and glossary terms, climatic zones and seasons, and high altitude requirements for text and imagery																			Confirm new cloud classifications and glossary terms, climatic zones and seasons, and high altitude requirements for text and imagery		
12 Continuous review																			Continuous review		
13 2: Identify new/replacement imagery																			2: Identify new/replacement imagery		
14 Determine suitability of existing imagery (ICA Vol II - 1987)																			Determine suitability of existing imagery (ICA Vol II - 1987)		
15 Identify imagery requirements based on new classifications, enhanced glossary and need to represent climatic zones, seasons and high altitude views																			Identify imagery requirements based on new classifications, enhanced glossary and need to represent climatic zones, seasons and high altitude views		
16 Identify metadata requirements																			Identify metadata requirements		
17 Generate a list of all images required with corresponding metadata																			Generate a list of all images required with corresponding metadata		
18 Send request to (targeted) WMO members asking for select imagery and metadata																			Send request to (targeted) WMO members asking for select imagery and metadata		
19 3: Draft new Glossary																			3: Draft new Glossary		
20 Prepare list of terms to be included																			Prepare list of terms to be included		
21 Add definitions																			Add definitions		
22 4: Review, revise and update text																			4: Review, revise and update text		
23 Review existing text																			Review existing text		
24 Provide list of images that would enhance text																			Provide list of images that would enhance text		
25 Draft details, descriptions and coding requirements (if any) for new classifications																			Draft details, descriptions and coding requirements (if any) for new classifications		

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Task Name	Q4			Q1			Q2			Q3			Q4			Q1			Q2		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
26	Review and revise existing text to ensure it meets current state of the science						Review and revise existing text to ensure it meets current state of the science						Review and revise existing text to ensure it meets current state of the science								
27	Update text to remove obsolete/archaic language (eg. crenellated, tessellation)						Update text to remove obsolete/archaic language (eg. crenellated, tessellation)						Update text to remove obsolete/archaic language (eg. crenellated, tessellation)								
28	5: Acquire and sort candidate imagery			5: Acquire and sort candidate imagery																	
29	Build and test web portal						Build and test web portal						Build and test web portal								
30	Request image submissions						Request image submissions						Request image submissions								
31	Sort images and metadata						Sort images and metadata						Sort images and metadata								
32	6: Select imagery			6: Select imagery																	
33	Select images for ICA						Select images for ICA						Select images for ICA								
34	Review/revise metadata						Review/revise metadata						Review/revise metadata								
35	Assemble/create						Assemble/create						Assemble/create								
36	7: Cloud Decision Aids			7: Cloud Decision Aids																	
37	Develop Decision/Coding Aid						Develop Decision/Coding Aid						Develop Decision/Coding Aid								
38	Develop simplified identification aid						Develop simplified identification aid						Develop simplified identification aid								
39	Phase 2																				
40	8: Design web-based ICA			8: Design web-based ICA																	
41	Design all aspects of the web-based ICA, including Image template, all desired functionality, final formats (e.g. various printing subsets), search requirements and compliance with WMO WWW style guide						Design all aspects of the web-based ICA, including Image template, all desired functionality, final formats (e.g. various printing subsets), search requirements and compliance with WMO WWW style guide						Design all aspects of the web-based ICA, including Image template, all desired functionality, final formats (e.g. various printing subsets), search requirements and compliance with WMO WWW style guide								
42	9: Build the website			9: Build the website																	
43	Build website and quantify cost of operating/maintaining website once operational						Build website and quantify cost of operating/maintaining website once operational						Build website and quantify cost of operating/maintaining website once operational								
44	10. Prepare content and populate website			10. Prepare content and populate website																	
45	Prepare all text, images and metadata for web format and populate website						Prepare all text, images and metadata for web format and populate website						Prepare all text, images and metadata for web format and populate website								
46	11. Complete website functionality						11. Complete website functionality						11. Complete website functionality								
47																					
48	12. Final proof-read, error correction and approval						12. Final proof-read, error correction and approval						12. Final proof-read, error correction and approval								
49																					
50	Phase 3																				
51	13. Publication (hard copy?)						13. Publication (hard copy?)						13. Publication (hard copy?)								