



The EUMETSAT
Network of
Satellite Application
Facilities



NWC SAF

Support to Nowcasting and
Very Short Range Forecasting

2010 Users' Survey Results

2010 Users' Workshop, Madrid 26-28 April 2010

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2010 Users' Survey

Created in order to:

- Assess the current status of products and engineering
- Know the Nowcasting needs
- Collect new user requirements for CDOP2

16 users answered the MSG part

10 users answered the PPS part

Three sections:

- MSG products and engineering
- PPS products and engineering
- Requested Improvements

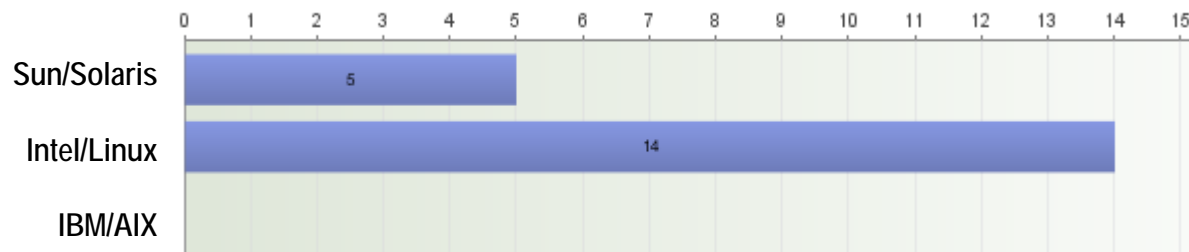
Survey Results: MSG part

Survey results: MSG

Which SAFNWC/MSG version is currently running in your site? (16)

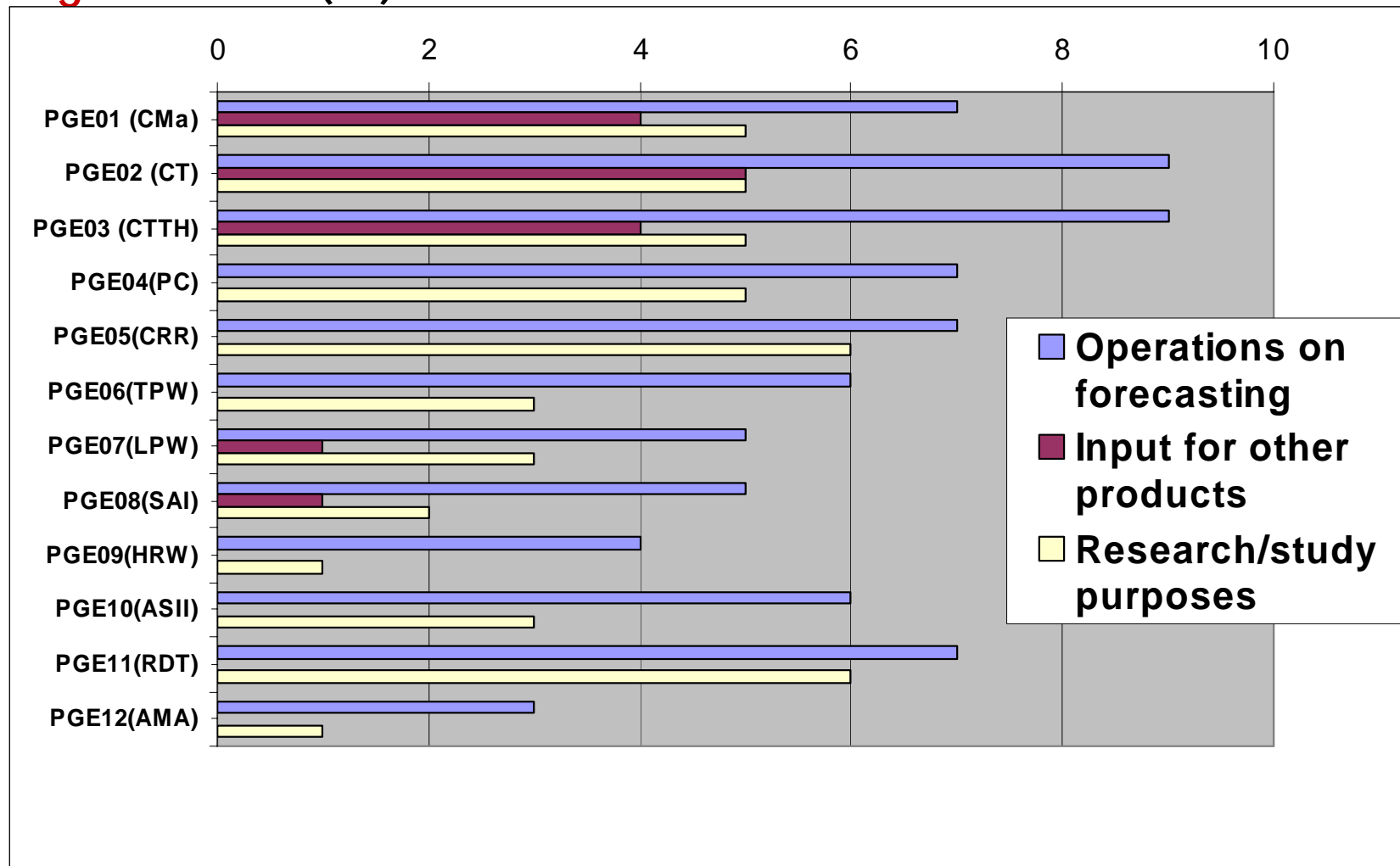


Application environment (16)



Survey results: MSG

Which are the applications of the SAFNWC/MSG products in your Organization? (16)



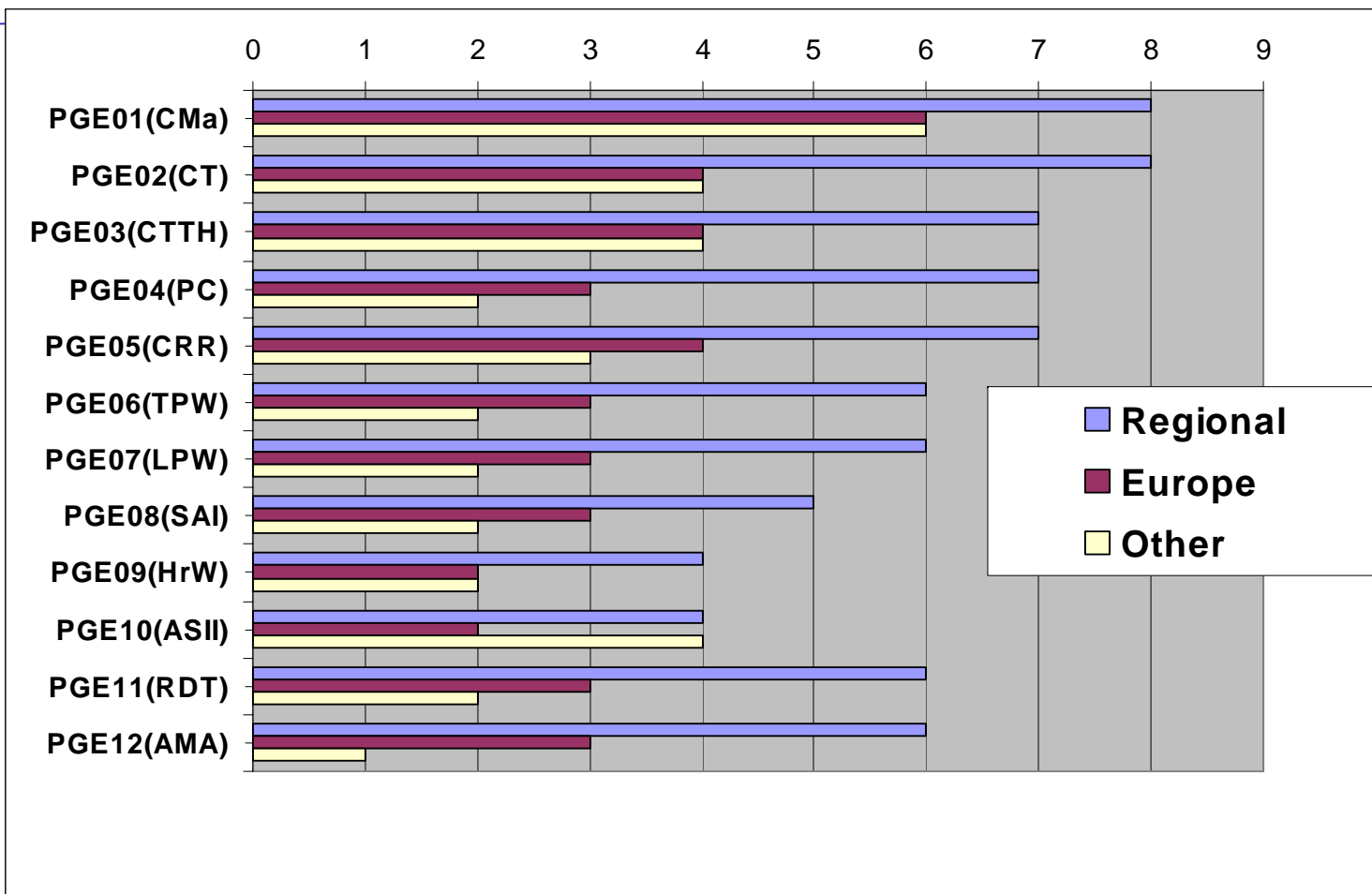
Survey results: MSG

Do you plan other applications in the future? (11)

- Accumulated snow product every 15 minutes making use of Cloud Mask Snow class
 - Monitoring of low clouds/fog using Cloud type over specific areas and for LANDSAF input.
 - Cross-validation of wind and instability products with own products
 - Input to INCA Nowcasting model.
 - To learn some technique to apply the packages on different channels; we are using these products using MTSAT-1R (COMS in the future) for the very short range forecast and research.
 - Preparation of warnings for Disaster risk reduction
 - 6 hourly snow cover maps derived on CT
 - Testing the automatic application of RDT in the Nowcasting system
 - Clear Air products including NWP-relative differences for convection.
 - Low cloud applications are under construction
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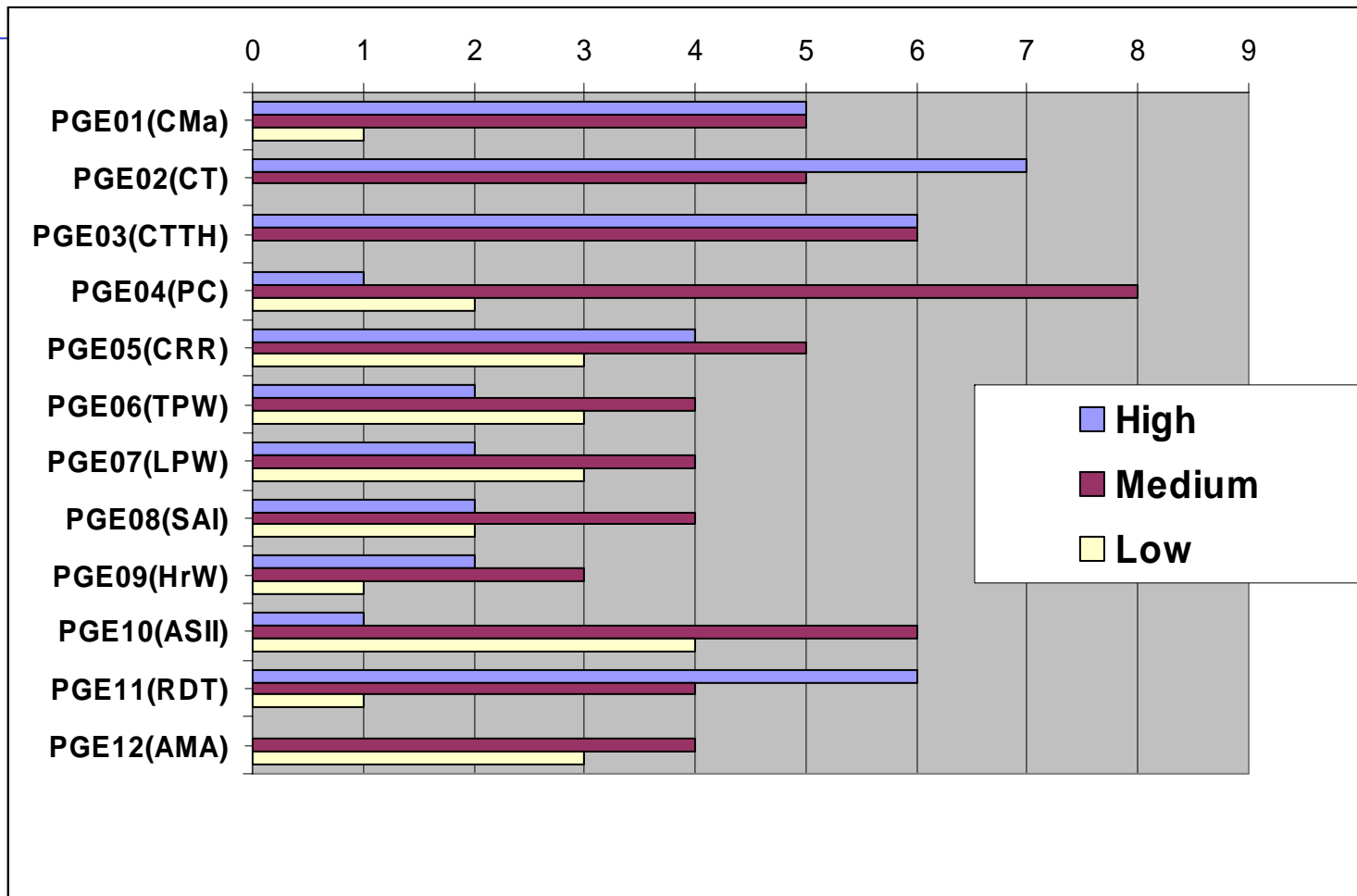
Survey results: MSG

Which area are you processing? (15)



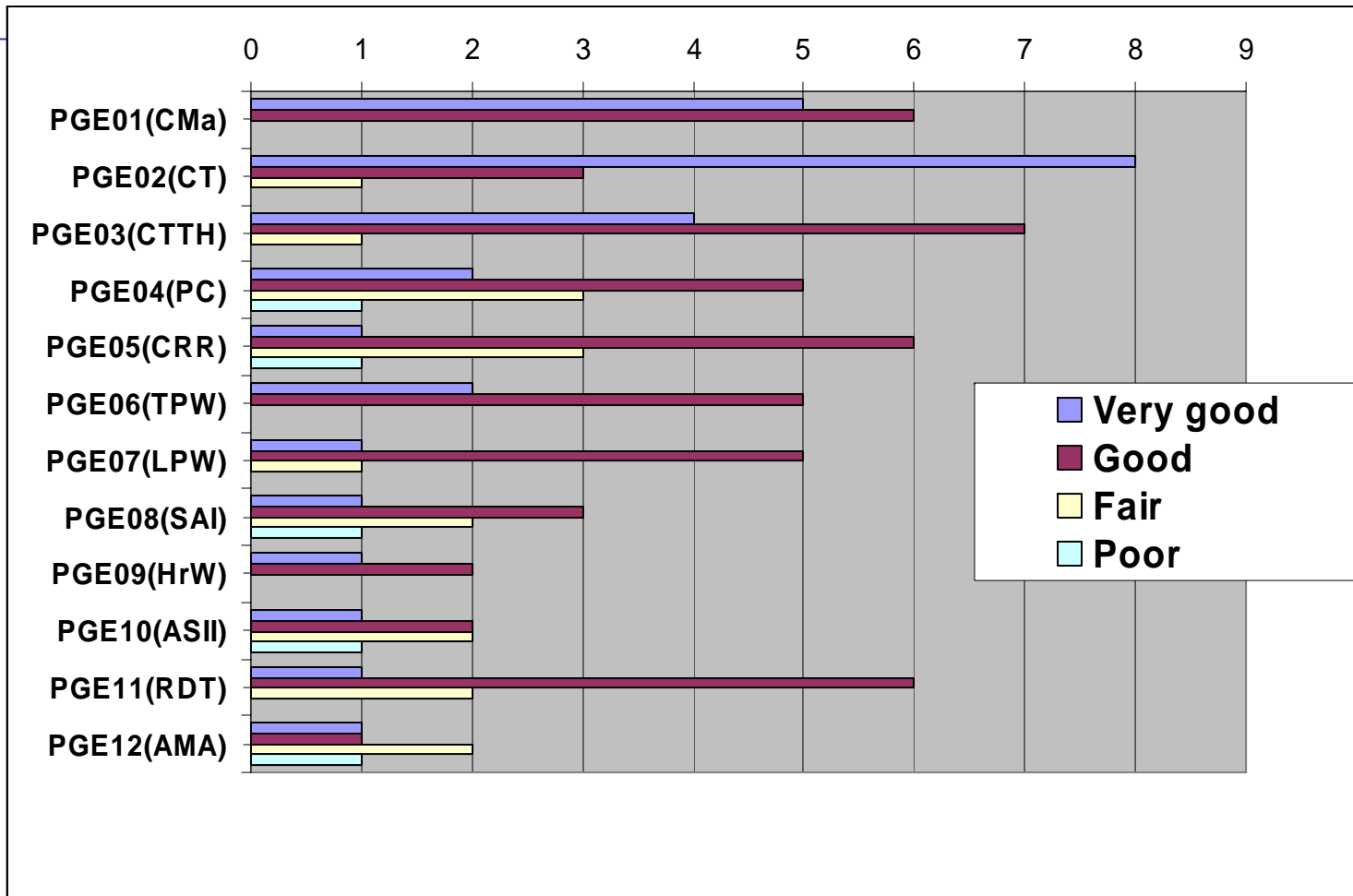
Survey results: MSG

How critical/important are the SAFNWC/MSG products for your service? (15)



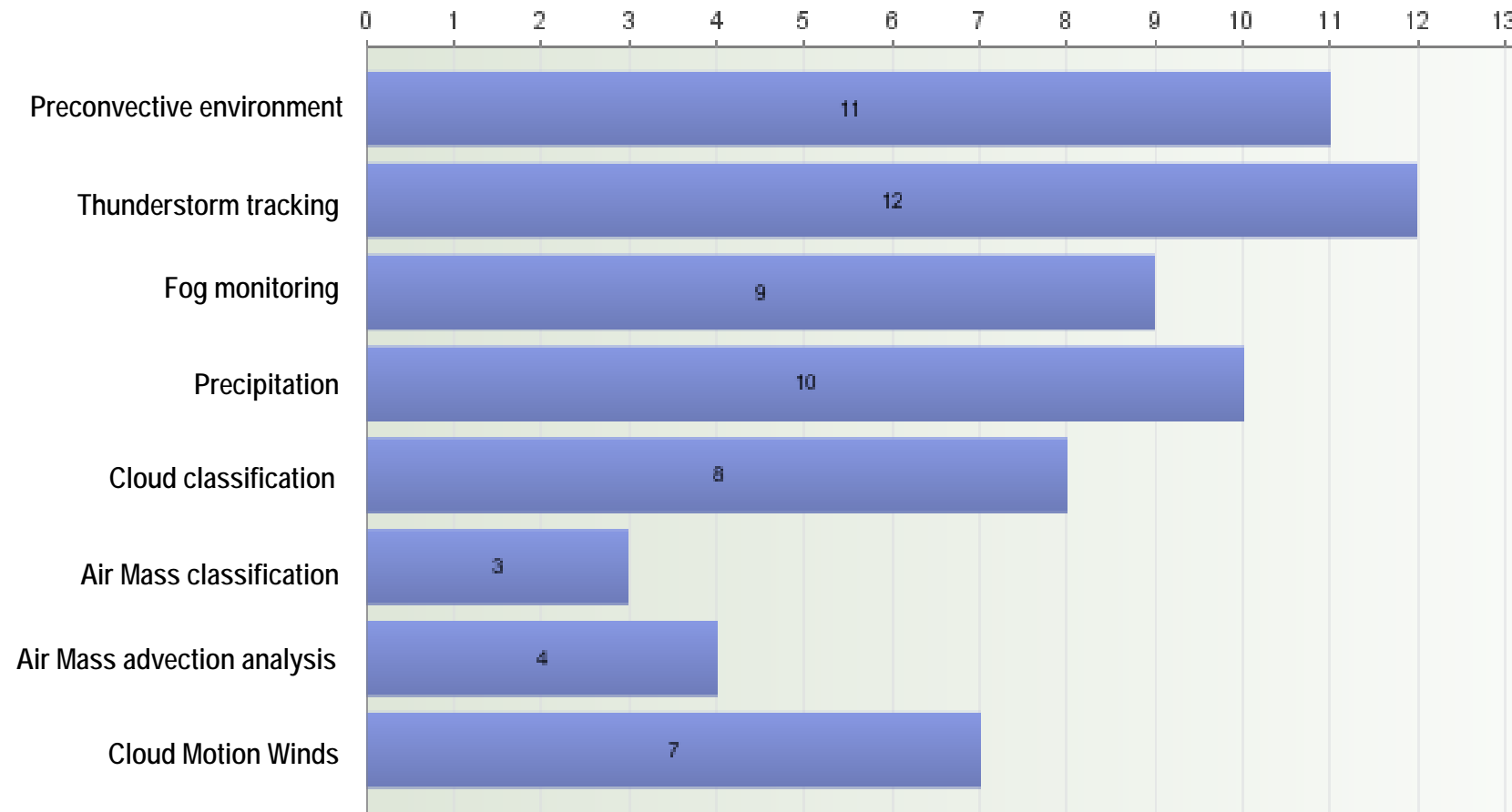
Survey results: MSG

Please rate the overall quality of the products (13)



Survey results: MSG

Can you specify your future needs in Nowcasting? (13)



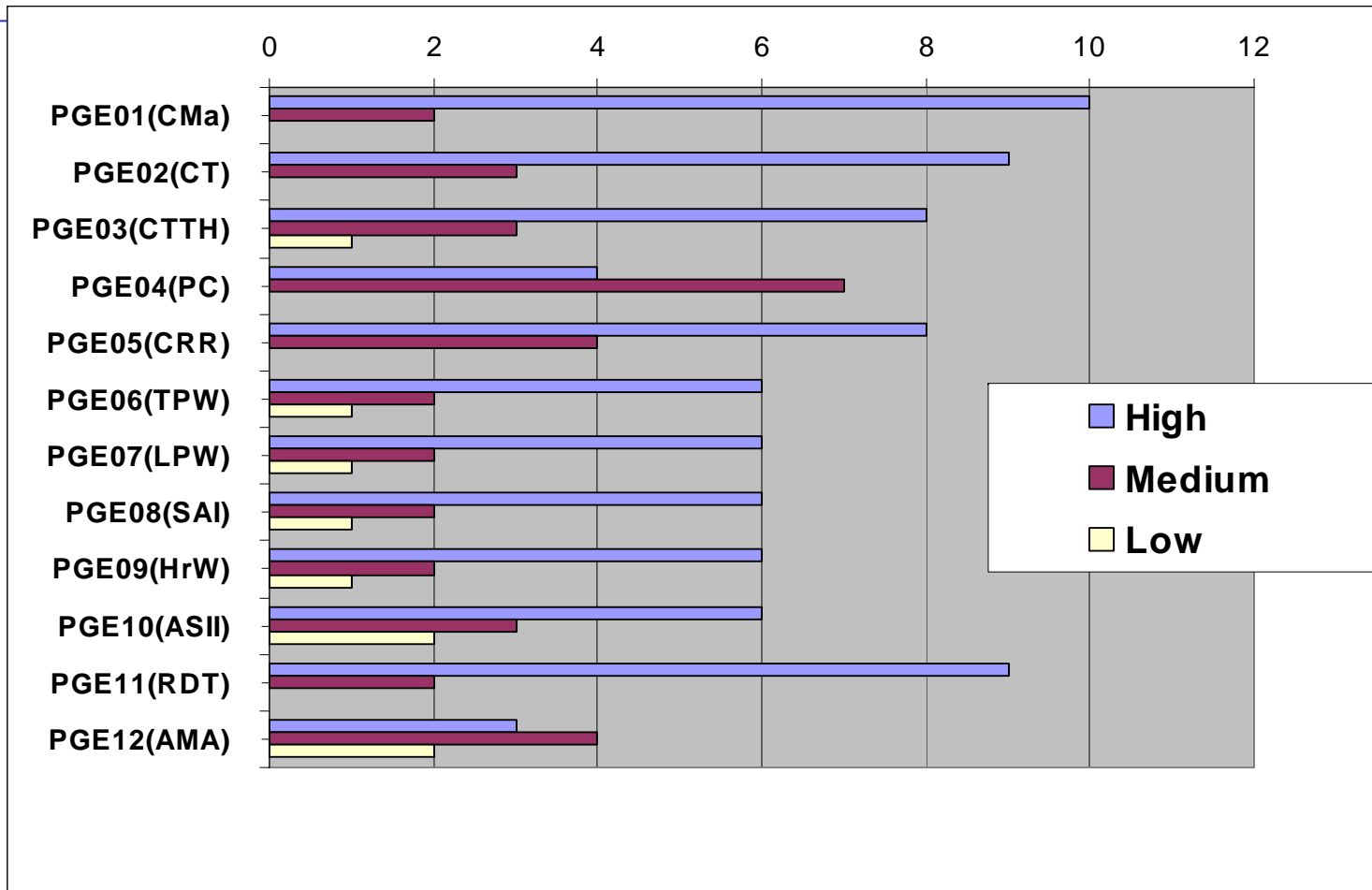
Survey results: MSG

Which new Nowcasting products to be codified at NWC SAF could cover your needs? (13)

- AMV extrapolated SAF products
- Tropopause height evaluation
- Predicted IR images up to 24 hours
- Cloud divergence, convergence, vertical mass transport
- Lifted index for “mixed very low-level layer”
- Convection initiation (and lightning initiation) product
- Increased use of temporal analysis

Survey results: MSG

How critical/important will be the adaptation to MTG of SAFNWC/MSG products for your service? (15)



Survey results: MSG

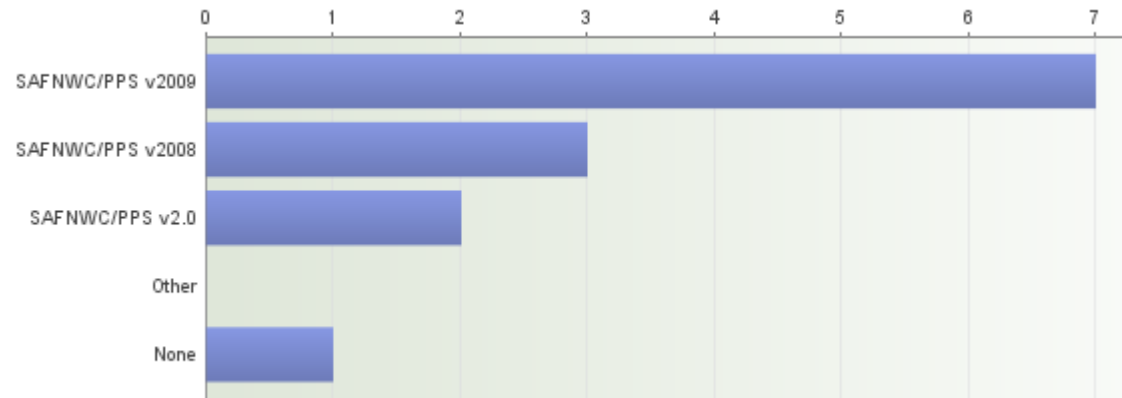
Which new products MTG based can be of interest for your service? (5)

- Products using lightning data
- Atmospheric soundings
- Soft transition MSG to MTG
- To consider comparing/combining products
- To consider mixed PPS and GEO cloud and precipitation products

Survey Results: PPS part

Survey results: PPS

Which SAFNWC/PPS version is currently running in your site? (10)

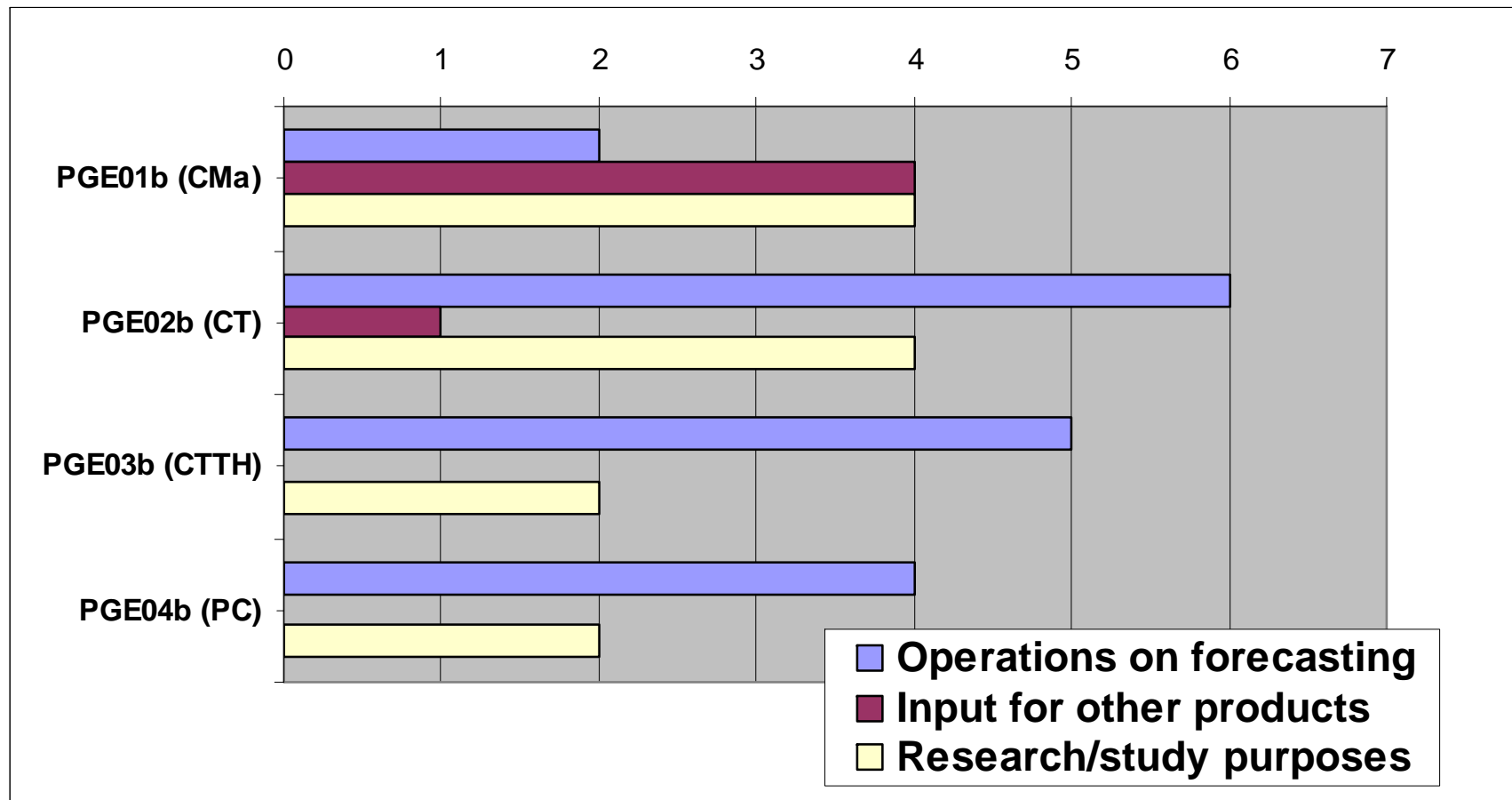


Application environment (9)



Survey results: PPS

Which are the applications of the SAFNWC/PPS products in your Organization? (9)



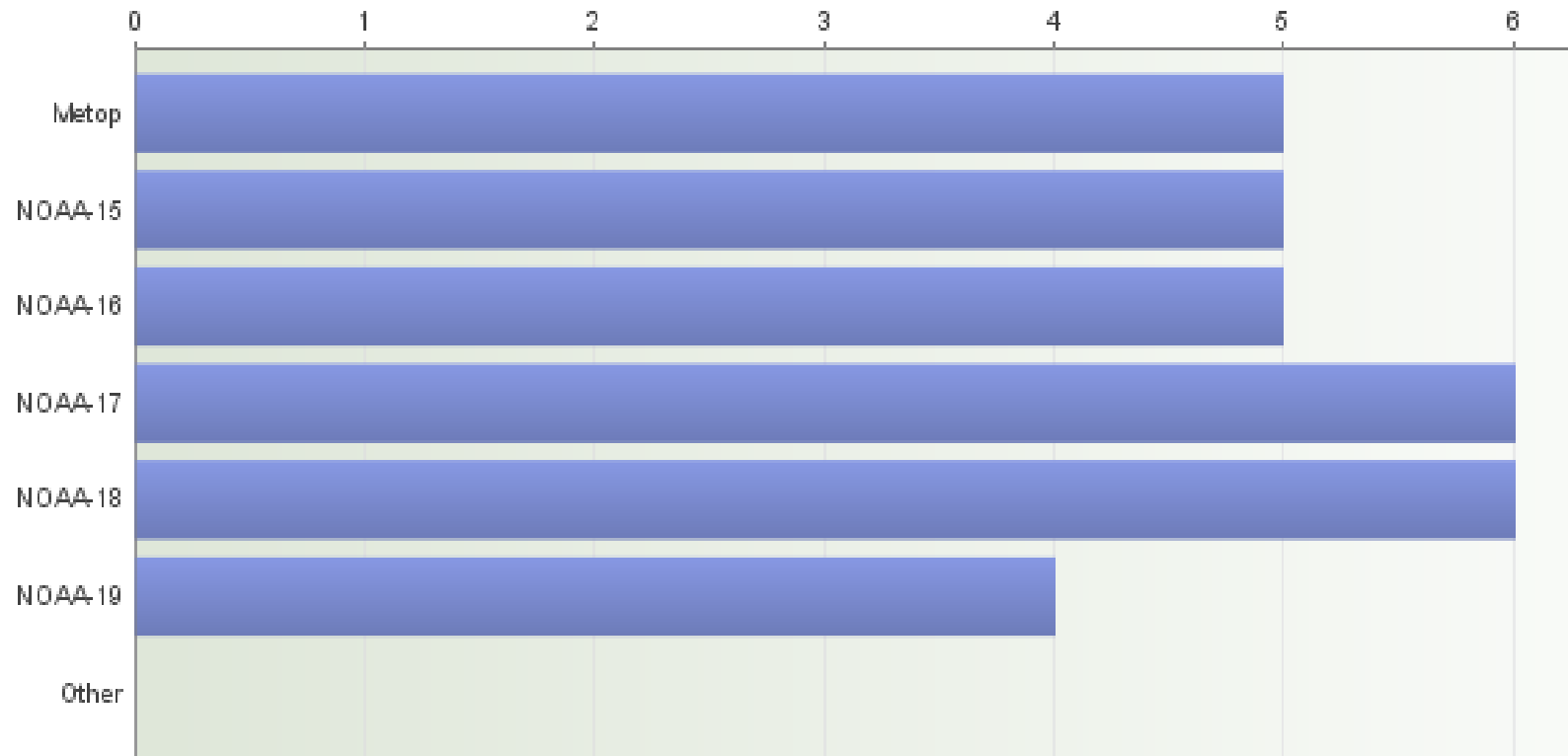
Survey results: PPS

Do you plan other applications in the future? (2)

- Better integration of products into software used by operational forecasters
- Low cloud applications are under construction.

Survey results: PPS

Which satellites are you processing? (9)



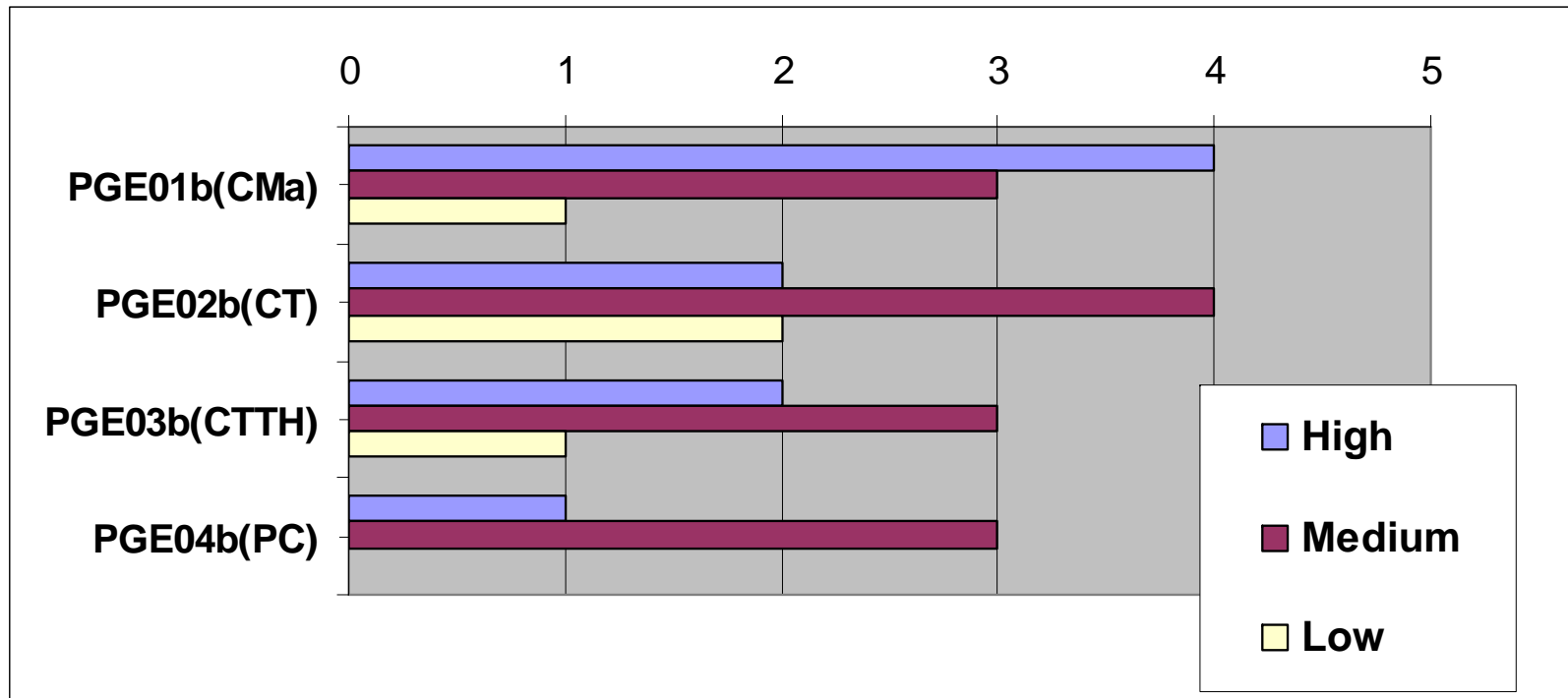
Survey results: PPS

Which area are you processing? (8)

- Parts of Europe, Turkey and its around (one area)
- Global
- Tests done with data from Maspalomas
- Germany, other areas are planned
- Austria
- Adriatic Sea
- A series of regional areas ranging from Denmark to Greenland. Global Metop data is processed for the northern hemisphere
- Scandinavia.

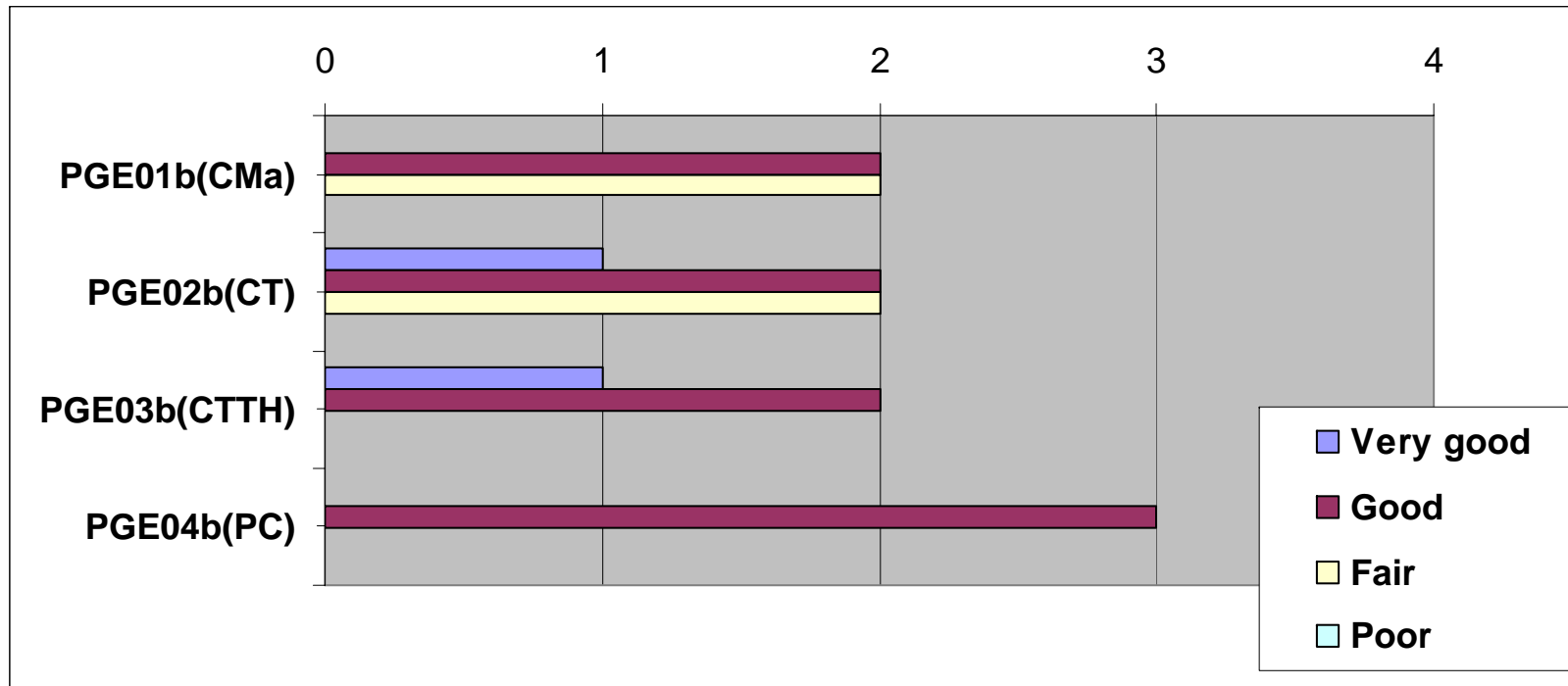
Survey results: PPS

How critical/important are the SAFNWC/PPS products for your service? (9)



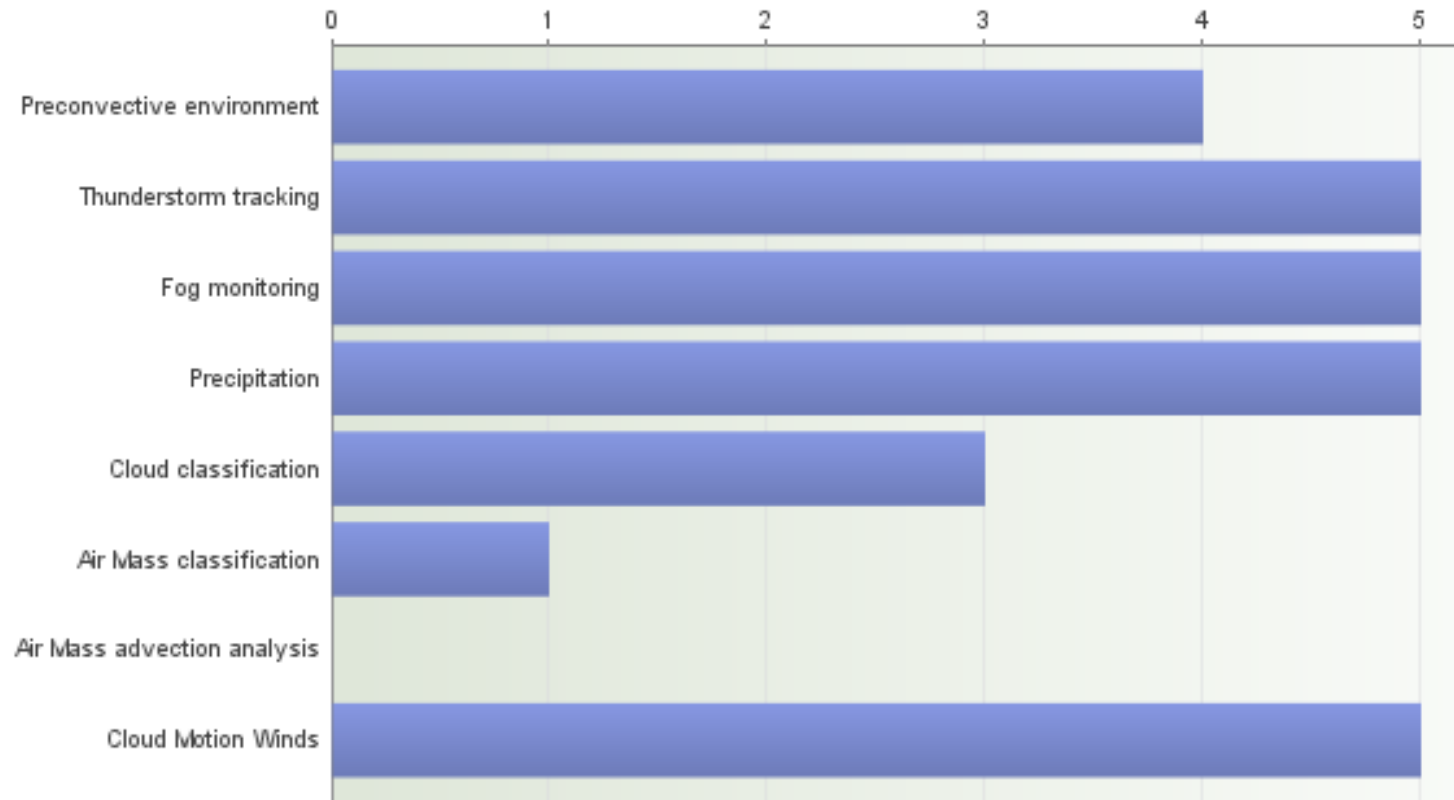
Survey results: PPS

Please rate the overall quality of the products (5)



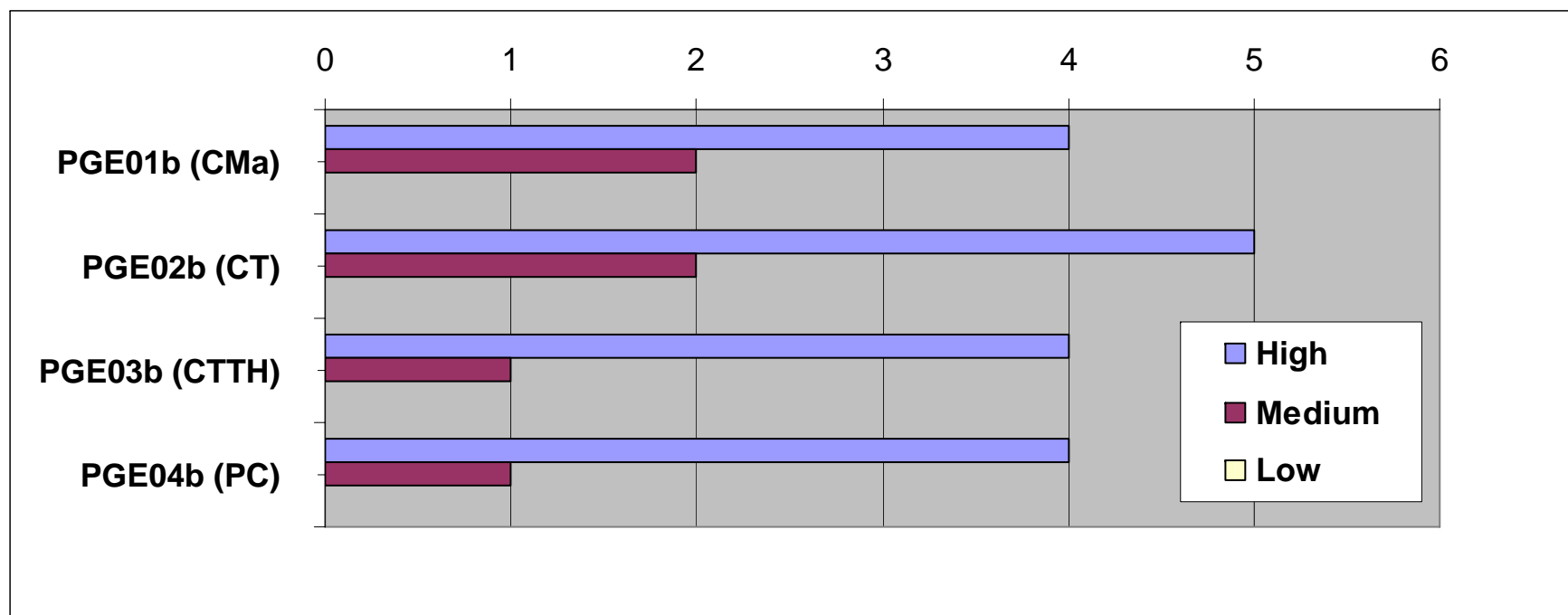
Survey results: PPS

Can you specify your future needs in Nowcasting? (6)



Survey results: PPS

How critical/important will be the adaptation to NPP/NPOESS of SAFNWC/PPS products for your service? (7)



Survey results: PPS

Which new products NPP/NPOESS based can be of interest for your service? (1)

- A cloud phase and/or other cloud microphysical product would be most interesting and useful

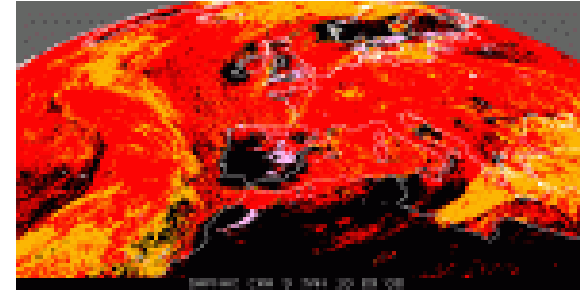
Survey results: PPS

Which developments in PPS would you see as desirable (software and products) (6)

- Easier installation and configuration
 - Integrated module for generating HTML files and images for the web
 - The third party software is partly on very old versions not compatible with standard installations coming with modern LINUX distributions.
 - Integration of the software packages into one package
 - Standalone libraries to utilise the products in another environment.
 - Cleaner python API
 - Full test data set for testing installation with none or minimal user configuration
 - Improved tools for checking user-contributed NWP fields during pre-processing.
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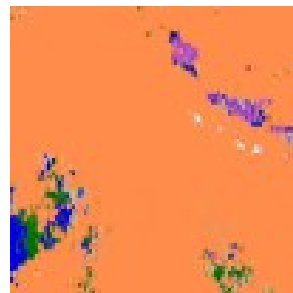
Survey Results: Requested Improvements by products

Requested Improvements PGE01 & PGE01b (CMA)



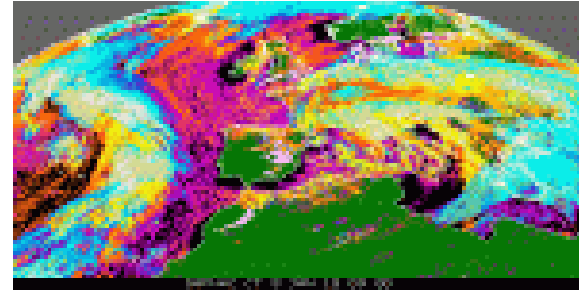
MSG part

- Improve quality in higher latitudes with low solar angles
- Smoke as a separate 'flag'
- To reduce snow false alarms
- To improve information on atmospheric dust
- Temporal analysis to be applied to snow contaminated pixels correction



- No comments for the **PPS part**

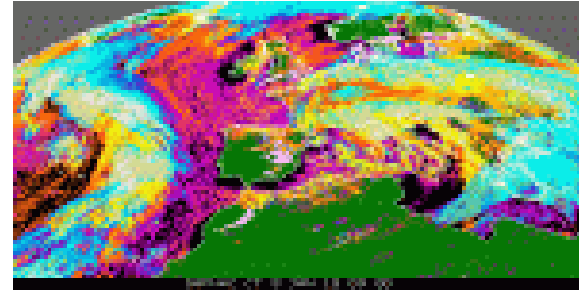
Requested Improvements PGE02 & PGE02b (CT)



MSG part

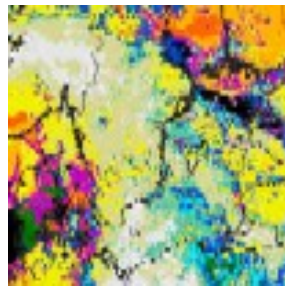
- Cold land surfaces
- To improve the detection of small cloudiness and allow for additional parameters in broken cloudiness (HRV analysis)
- To use MTG NIR1.3 channel data to better discriminate thin cirrus clouds.
- Cumuliform/stratiform distinction
- Solid/liquid phase distinction
- Other microphysical properties as effective particle radius and cloud liquid path.

Requested Improvements PGE02 & PGE02b (CT)



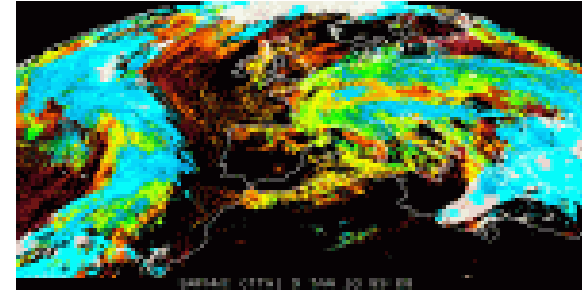
MSG part

- To create snow covered by thin cirrus class as well.
- To make more use of HRV data at 1km resolution
- To use LI data with MTG to create a convective cloud class within the (very) high cloud class
- In case of multilayer class identified, it would be very useful to get more detailed information.



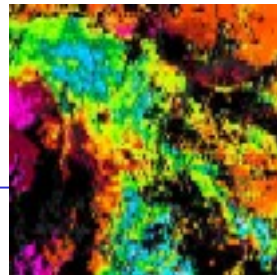
- No comments for the **PPS part**

Requested Improvements PGE03 & PGE03b (CTTH)



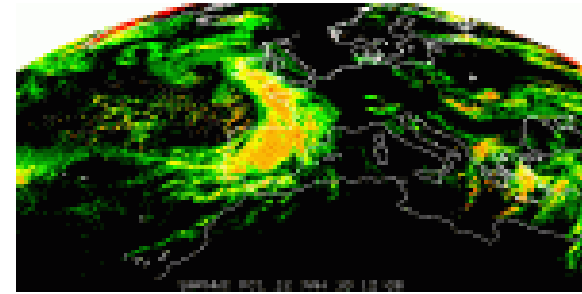
MSG part

- Reduction of "boxes" when showing semitransparent cloudiness
- To improve low-level cloud height assignment in case of inversion.
- To improve vertical resolution near tropopause (mature convection)
- To create snow covered by thin cirrus class as well
- To indicate somehow that the cloud top height may be wrong for cold U or cold ring shape clouds
- To fill in the ring?
- CTTH could provide useful information to PGE11(RDT)



- No comments for the **PPS part**

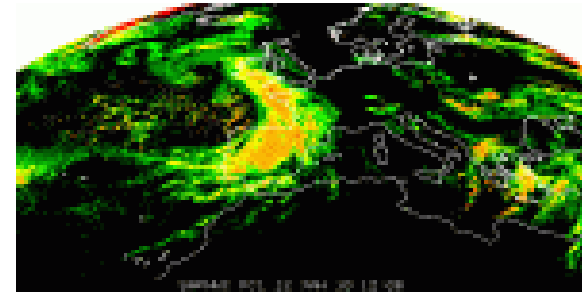
Requested Improvements PGE04 & PGE04b (PC)



MSG part

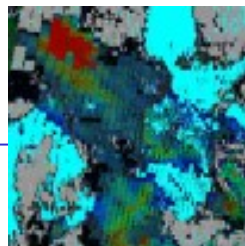
- More focus on severe weather areas maybe combining with other sources
- To limit sun dependence
- Better tuning the method for low solar elevation cases
- To take into account the cloud top microphysical information more directly
- To include parallax corrections
- Quality information easier to use
- To include some microwave information from polar satellites for strong fronts and at night

Requested Improvements PGE04 & PGE04b (PC)



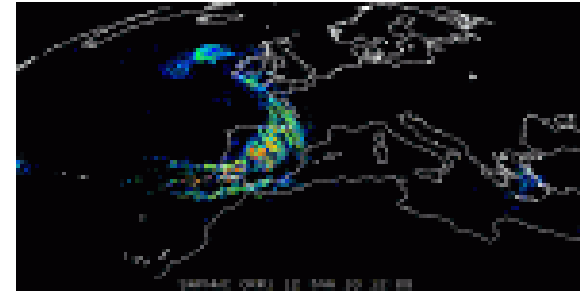
MSG part

- To integrate some recent/close PPS rain product information in the product itself (updated recalibration), or in form of quality indicators (indication on real confidence on the calibration).
- To allow introducing local corrections in the SW from current/recent radar or gauge data.
- To rethink product or product use considering similar developments and specified needs.
- To consider also internal contrast/comparison/merging to other products (e.g. PGE05-CRR).



- No comments for the **PPS part**

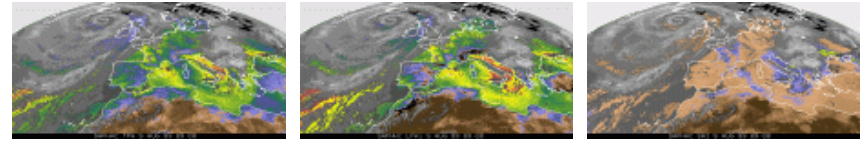
Requested Improvements PGE05 (CRR)



- Information on confidence or probability in each rain intensity.
- Better selection between convective and not convective cases.
- To use more channel data.
- Take into account some microphysical info.
- To use lightning information with MTG.
- To add MW info from a polar satellite.
- To study reduced number of classes.
- Reconsider alternative calibration for "warm tops"

Requested Improvements

Clear Air products

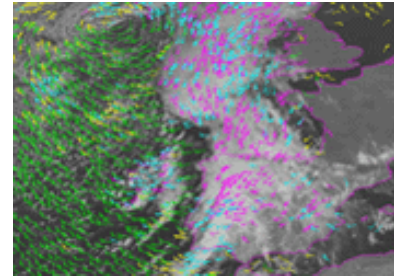


PGE06 (TPW) PGE07 (LPW) PGE08 (SAI)

- PGE08 (SAI) only reacted to very unstable events
- Underestimation of instability compared to model fields (and Regional Instability Index RII)
- PGE08 (SAI) product quality is too much variable (dependent on air mass and ground characteristics) to be actually useful and used.
- PGE08 (SAI) to be substituted by equivalent simulated Lifted Index product.
- PGE08 (SAI) equivalent products less ground-dependent

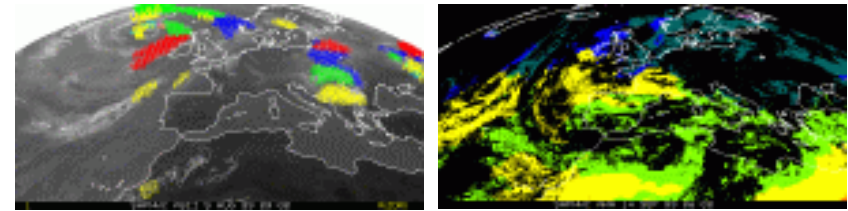
PGE13 covers most of these issues

Requested Improvements PGE09 (HrW)

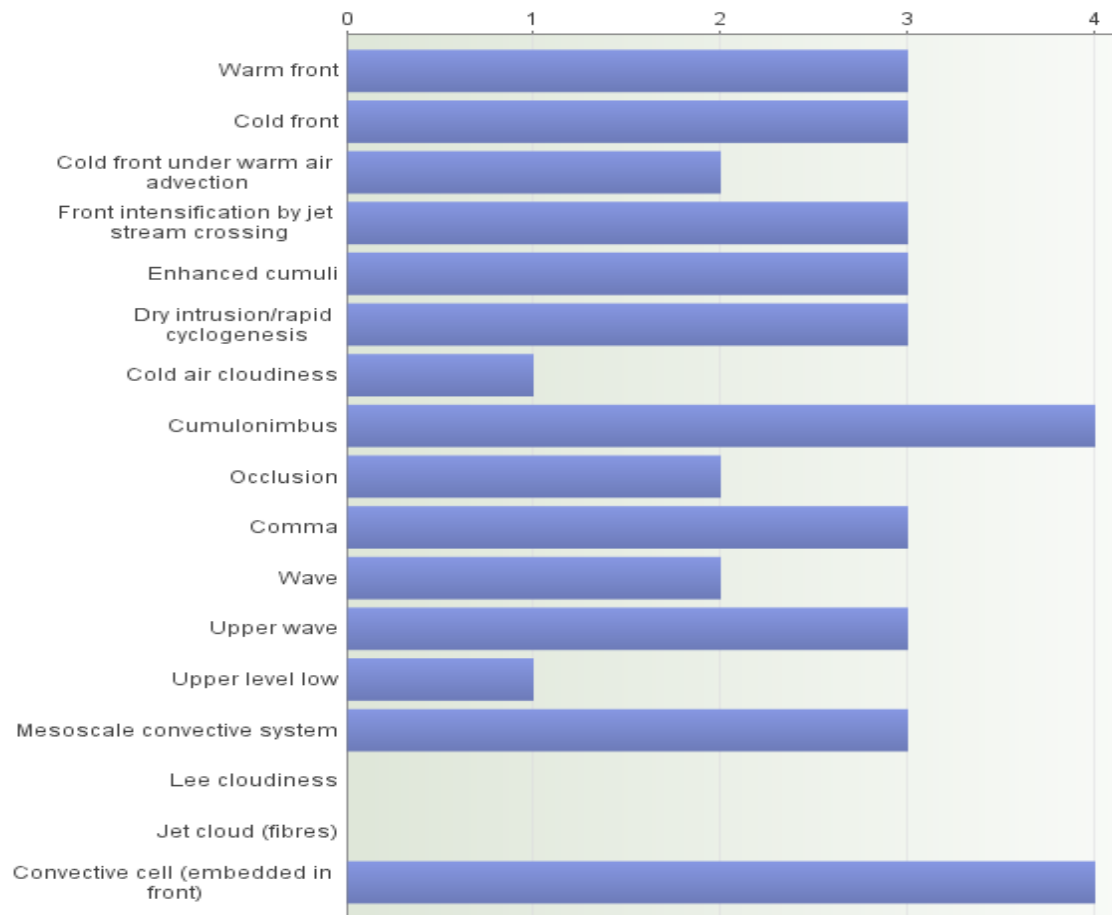


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- The product is useful for convergences/divergences, wind over mountains or offshore
 - Include in the product information fields on displacements/trajectories
 - To allow for detailed wind computations for specific CT classes as additional option
 - QI threshold variable

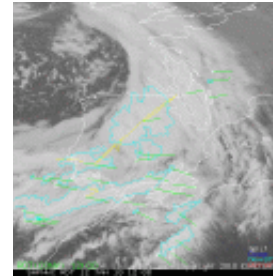
Requested Improvements PGE10 (ASII), PGE12 (AMA)



Which conceptual models do you consider most desirable to be objectively diagnosed?



Requested Improvements PGE11 (RDT)



-
- To avoid identifying some Cs/Ci structures as convective.
 - Identification of Mesoscale Convective System (or even Mesoscale Convective Complex)
 - Earlier detection of convective clouds - almost all detected clouds are in mature phase
 - To add severity info better discrimination between convective and not convective clouds (fronts!)
 - Contours are sometimes too loose
 - Some tendency to detect too large structures, Cs/Ci but also merging sometimes several cells. CRR and other products could be useful in these cases.

Conclusions

- The 2010 Users Survey has shown the good shape of the NWC SAF products at the current phase
- A lot of suggestions for the CDOP2 have been collected

The NWC SAF Project Team appreciate very much the users contribution to the CDOP2 preparations