EUMETSAT

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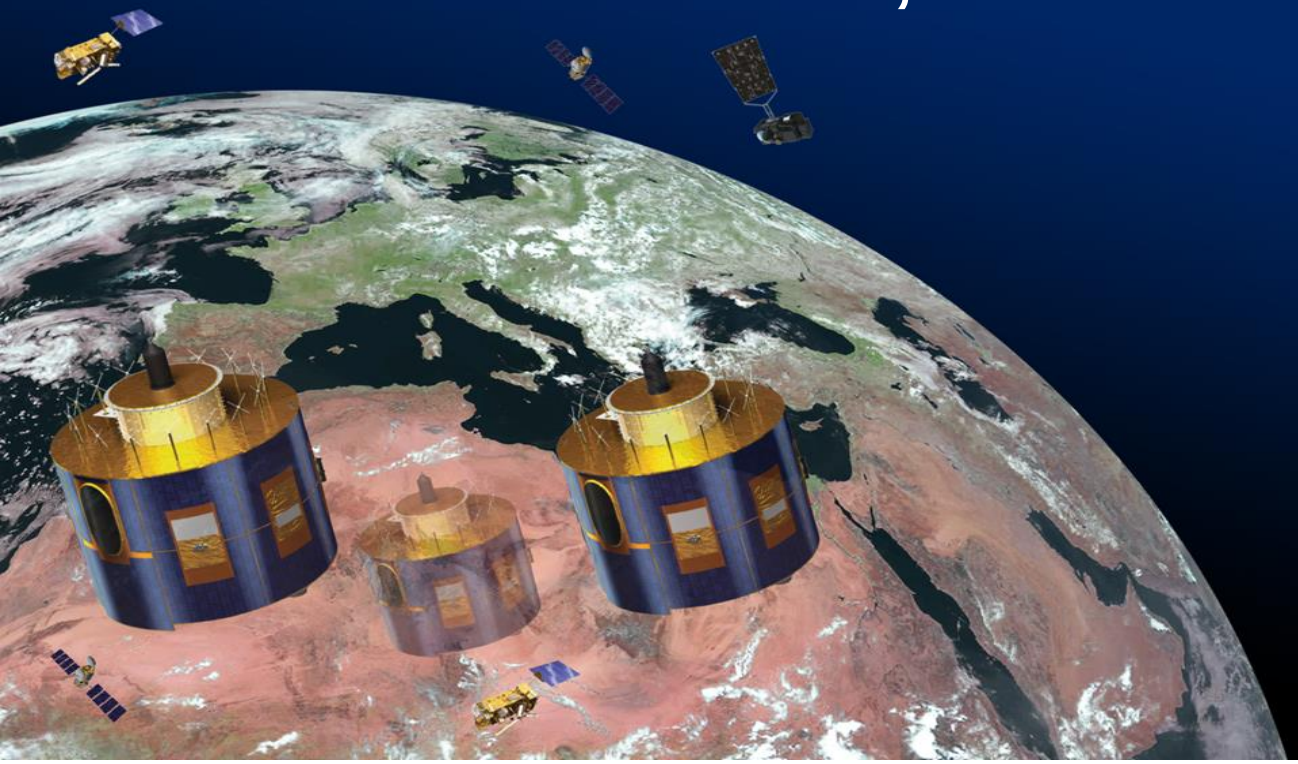
Slovenian Environment Agency

Welcome, old and new CWG participants



CWG Purpose and Objectives

Purpose

The main purpose of the Convection Working Group is to stimulate, efficient utilization of satellite data in operational meteorology for detection, analysis and prediction of deep moist convection and associated phenomena.

Objectives

Developing a body of knowledge in monitoring convection through satellite observations.

Offering a meeting point for researchers, developers and operational users, for exchanging experiences and feedback on practices and operational and experimental applications aimed at convection processes in the atmosphere.

Actions from the previous CWG Meeting in Florence

Action 1:
CWG members to provide feedback on the MTG-FCI Rapid Scanning Service (RSS) channel selections, i.e. regarding their anticipated needs/applications for channels and in what resolution. The current HRFI mission (providing the RSS) has assumed a direct dissemination of four channels (VIS0.6, NIR2.2, IR3.8, IR10.5) at a double resolution compared to the full disk mission. The feedback is to be sent to Jochen Grandell by 30 June 2016.

Action 2:
Since the document “Recent concepts and practices” published on CWG webpage will not be updated any more (and will be frozen at the current stage), the CWG co-chairs and the EUMETSAT secretariat are to identify a feasible solution for creating a new document in a more condensed format. The target audience for this document are the operational forecasters.

Action 3:
All CWG members are invited to share links to their most relevant scientific publications on convection, to be published on the CWG webpage.

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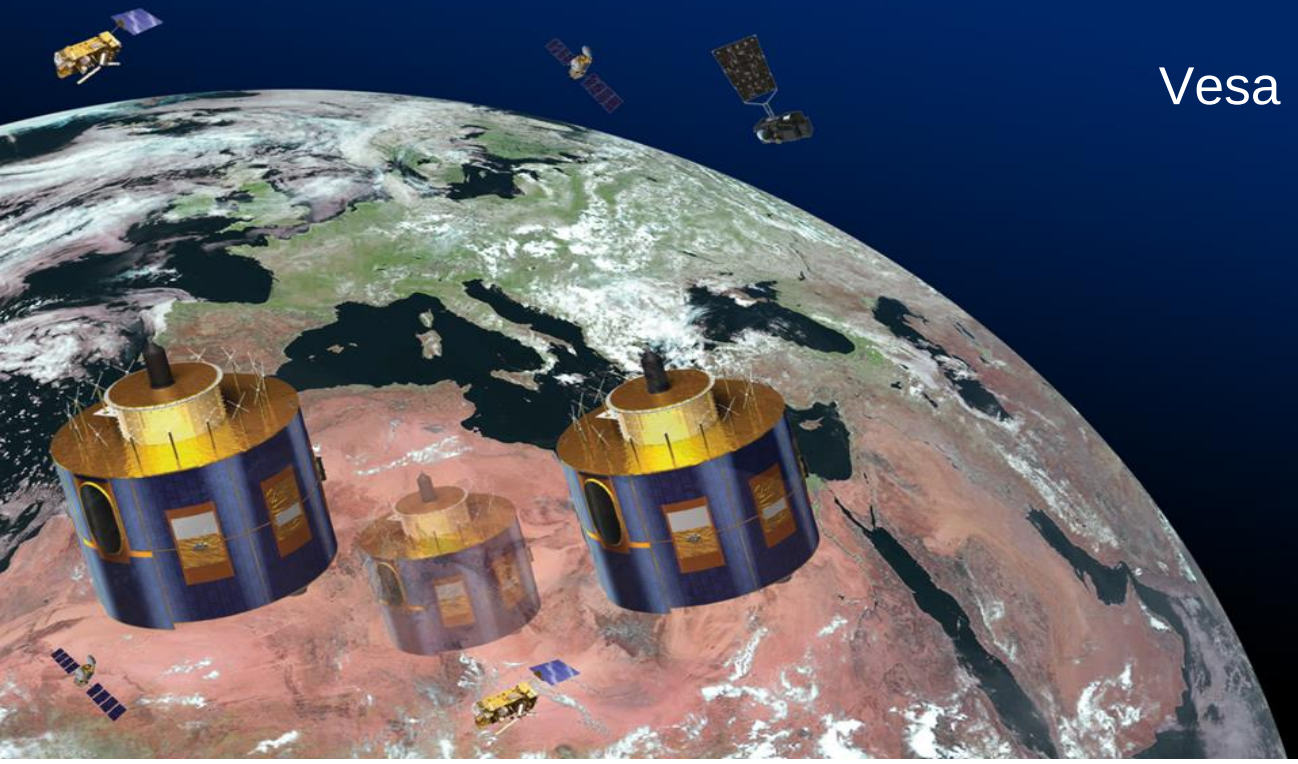
Satellite Convection Guidance (SCG)

Vesa Nietosvaara, Jochen Grandell,
EUMETSAT
Mateja Iršič Žibert, ARSO



Satellite Convection Guidance first version is now available

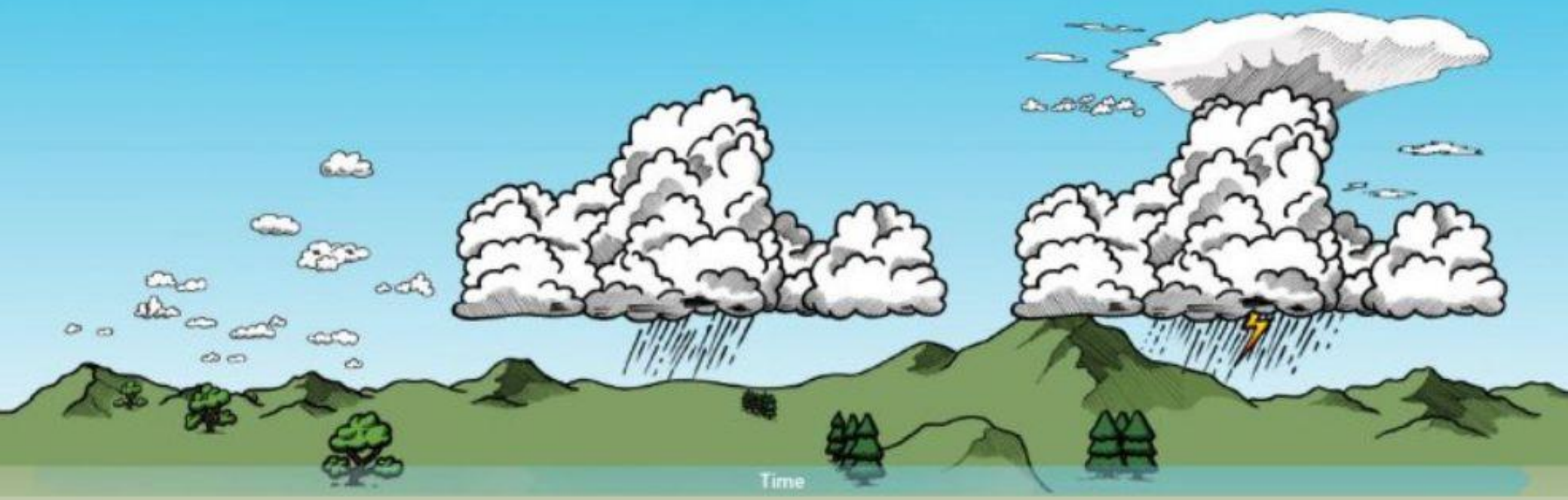
Pre-Convective Environment

Convective Initiation

Mature Convective Storm

CWG joint contribution
Overview of products
Regularly updated

STEP BY STEP DEEP CONVECTION NOWCASTING



1. Pre-Convective Environment

Refers to the 4-D thermodynamic and wind field present before the convective initiation occurs.

2. Convective Initiation

Refers to the process where an existing cumulus cloud begins rapid vertical growth.

3. Mature Convective Storm

Refers to the presence of convective clouds with tops at or above their local equilibrium level

Useful tools:

Satellite Convection Guidance in 2017

Mar
- First idea and a draft design: CWG co-chairs meeting, Ljubljana

May
- Discussion on design - EUMETSAT designer

Jun
- ECMWF workshop – pre-info

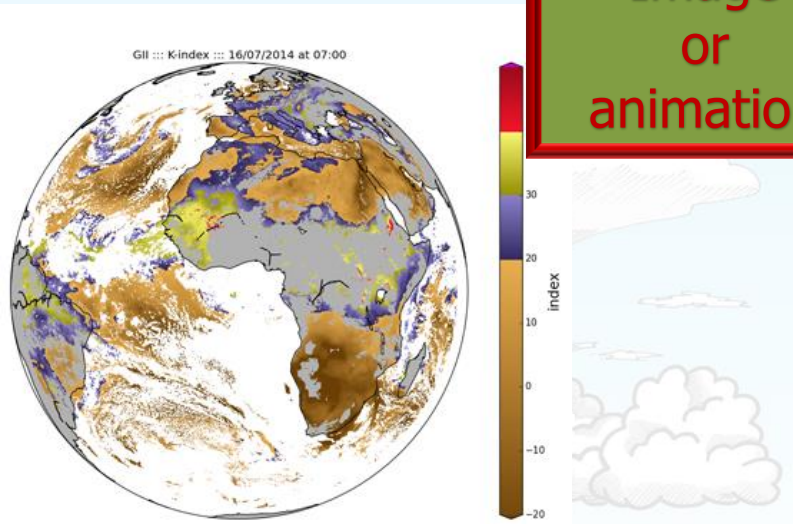
Sep
- CWG Splinter meeting Pula – discussion on the first version
- Poster at ECSS – poster presentation

Dec
- First release at CWG WEB page & promotion

MSG Global Instability Index

Operationally produced by EUMETSAT

Image or animation



Application:
Detection of possible unstable areas through satellite based stability indices in pre-convective environment.

The Global Instability Index (GII) product consists of four indices which describe the stability of the atmosphere (K-Index, KO Index, Lifted Index, Maximum Buoyancy) together with precipitable water content (Layer precipitable water content, Total precipitable water). Regional Instability Index (RII) is the pixel-based version of the GII, which is produced for a subset of the MSG image disc over Europe, available also every 5 minutes.

Limitations:
Not available on cloudy areas, resolution is 3 x 3 SEVIRI pixels.

Pros and cons:
✓ Good for following the deviation from the NWP model stability indexes

✓ Available over MSG - 0 degree and MSG- Indian Ocean area

✓Available also during night-time

X BUFR format

Accessibility and Dissemination:

1. 15-minute-data disseminated via EumetCast – in BUFR format (5 minutes for RII over Europe)
2. 6-hourly-images on **ePort** within EumeTrain website

Additional Information:

Case Study
Training Module
Practical info and documentation

Overview prepared by Mateja Iršič Žibert, ARSO, V.2017

Satellite Convection Guidance

EUMETSAT ESSL

Convection Working Group

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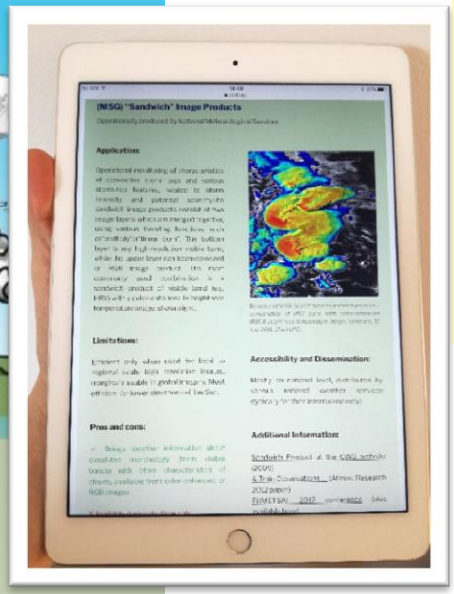
December 2017

WHAT'S NEW:

- New Convection Nowcasting Satellite Guidance
- Upcoming CWG meeting
- New papers added
- Invitation to CWG splinter meeting at ECSS



Future updates: we need your help!

- CWG members can help in:
  - Adding missing products.
  - Finding Showcases (1-2 images/animations with some text) for products which are already on the list.

Satellite Convection Guidance: plan for 2018

Apr
- Discussion on new products at CWG meeting, Ljubljana

Jun
- Collection of new satellite products or showcases from CWG members

Sep
- Implementation on CWG web site
- Presentation at EUM conference

Dec
- Promotion

Special thanks to…

Martin Setvak, Xavier Calbet and NWCSAF, Davide Melfi, Thomas August, Phil Watts, Kris Bedka…

... ESSL for Web creation, Aleksandra Tusinska for helping with the first steps
... Stephen Killick, EUMETSAT, design.