

User Support Activities 2016

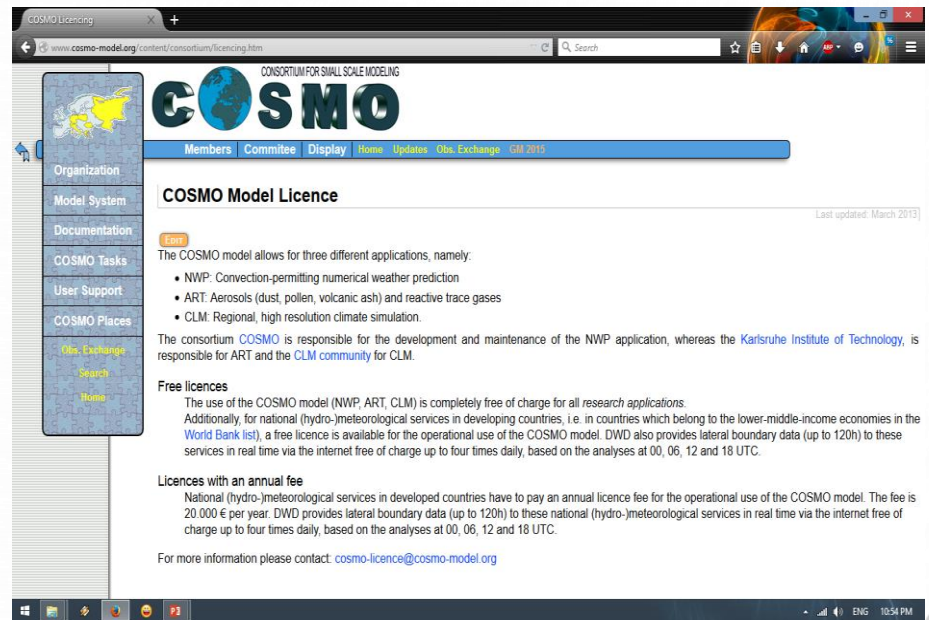
*Cosmin BARBU, Rodica DUMITRACHE,
Bogdan MACO, Mihaela BOGDAN*

COSMO Licenses Policy

- Scientific usage: Freely available to universities, research institutes and national weather services; ICON data are transferred in delayed (24 hrs old) mode.
- Operational numerical weather prediction for non-COSMO members:

Free for weather services in *developing countries* (see *World Bank country classification!*)

Otherwise: Annual fee of 20.000 €;



The screenshot shows a web browser window displaying the COSMO Model Licence page. The page title is "COSMO Model Licence" and it is dated "Last updated: March 2013". The page content includes a navigation menu with links for "Members", "Committee", "Display", "Home", "Updates", "Obs. Exchange", and "GM 2015". The main content area is titled "COSMO Model Licence" and contains the following text:

Free

The COSMO model allows for three different applications, namely:

- NWP: Convection-permitting numerical weather prediction
- ART: Aerosols (dust, pollen, volcanic ash) and reactive trace gases
- CLM: Regional, high resolution climate simulation.

The consortium COSMO is responsible for the development and maintenance of the NWP application, whereas the Karlsruhe Institute of Technology, is responsible for ART and the CLM community for CLM.

Free licences

The use of the COSMO model (NWP, ART, CLM) is completely free of charge for all research applications. Additionally, for national (hydro-)meteorological services in developing countries, i.e. in countries which belong to the lower-middle-income economies in the World Bank list, a free licence is available for the operational use of the COSMO model. DWD also provides lateral boundary data (up to 120h) to these services in real time via the internet free of charge up to four times daily, based on the analyses at 00, 06, 12 and 18 UTC.

Licences with an annual fee

National (hydro-)meteorological services in developed countries have to pay an annual licence fee for the operational use of the COSMO model. The fee is 20.000 € per year. DWD provides lateral boundary data (up to 120h) to these national (hydro-)meteorological services in real time via the internet free of charge up to four times daily, based on the analyses at 00, 06, 12 and 18 UTC.

For more information please contact: cosmo-licence@cosmo-model.org

<http://www2.cosmo-model.org/content/consortium/licencing.htm>

WG6 Priority Task – “User Support”

- ❖ Starting from September 2011, NMA Romania has been involved in the COSMO User Support Activities priority task:
 - ✓ supporting new COSMO users during the implementation phase through e-mail assistance and by remote access to their computer system;
 - ✓ helping the COSMO users to set up their operational COSMO applications;
 - ✓ running the COSMO - Model and the INT2LM software.

- ❖ As part of these activities, Romania offered support for parallel compiling and running COSMO model without data assimilation.

- ❖ Basic requirements:
 - *Fortran compiler*: gfortran (vs. > 4.5); *C compiler*: gcc
 - Libraries: DWD, GRIB_API, NetCDF
 - int2lm & cosmo sources

Support Activity = email assistance + remote access + trainings

COSMO Help & usage

- COSMO contract for scientific evaluation; e-mail to detlev.majewski@dwd.de
- Support during installation of the COSMO-model: e-mail to cosmo-support@cosmo-model.org.
- Topographical data for your COSMO-model domain, e.g. at a grid spacing of 0.0625 (~ 7 km); e-mail to detlev.majewski@dwd.de.
- ICON data corresponding to your COSMO-model domain e-mail to norbert.liesering@dwd.de.
- Create COSMO-model products (e.g. via GrADS); if you need help, e-mail to helmut.frank@dwd.de.
- Implement the operational scheduler of M. Gertz; e-mail to michael.gertz@dwd.de.

Email assistance + remote access

- On 17 February 2016 (according to the plan) DWD distributed the new topographical data for ICON

Subject: ATTENTION: New topographical data files for ICON and ICON-EU Nest area on 17 February 2016 with the 6 UTC run

Dear colleagues and users of ICON data,

On 17 February 2016 with the 6 UTC run we plan to introduce new topographical data for the ICON model (see the attached pictures of the differences between current and new topographical fields):

- For the global (13 km grid spacing) data set there are only small differences (-65 up to +64 m) between the current and the new data sets. They are due to a bug correction in the location of the 1-km raw data set.
- For the ICON-EU Nest domain (6.5 km grid spacing) the differences are much larger (-480 up to 545 m). They are due to the introduction of a topographic filtering of the 6.5 km topography to reduce fictitious precipitation maxima on each mountain top.

Please ask Mr. Norbert Liesering (Norbert.Liesering@dwd.de) for a test data set (including a new topographical data set) for your model domain immediately (if you have not done yet!!)

Please use the new topographical data set (including hhl field) starting 17 February 2016 with the 06 UTC run!

If you have any questions do not hesitate to contact me!

Best regards,

Detlev Majewski

Deutscher Wetterdienst
Research and Development
Department FE 1 (Meteorological Analysis and Numerical Modeling)
Frankfurter Strasse 135
63067 Offenbach
Germany

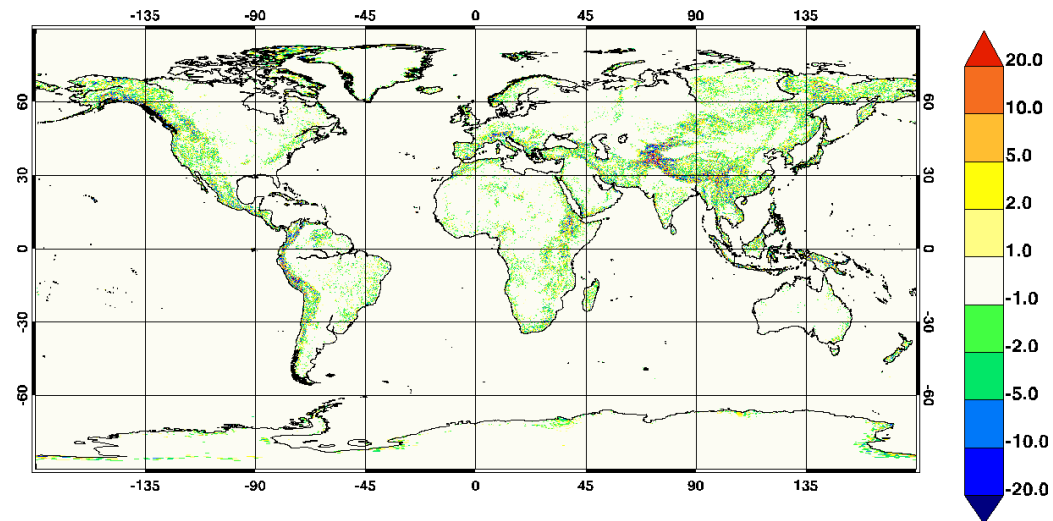
Email assistance + remote access

Smoothly migration - previous steps to be accomplished:

- DWD started to distribute ICON test data to all COSMO-Model users worldwide
- The users has been previously supported on implementation and testing the COSMO interpolation version (2.02) and model version (5.03)

Expectation – *improvement of COSMO model forecast.*

ICON_global 2015120800 HSURF [m] Para minus Routi
mean: 0.04 std: 1.37 min: -65.31 max: 63.69



Email assistance + remote access

Supported countries in 2016:

- Armenia - Zara Petrosyan
- Botswana - Charles M. Molongwane
- Ecuador - Arias Iza Marcia Vanessa
- Georgia - George Mikuchadze, Nato Kutaladze
- India (Hymalaya) - Ashwin
- Indonesia - Wido Hanggoro
- Jordan - Sehim F. Al-Shrideh
- Malawi - Amos Mtonya, Charles Vanya
- Mauritius - Ganessen Virasami
- Mozambique - Genito Maure
- Nigeria - Izuchukwu EBENEBE, Eniola Olaniyan
- Oman - Badriya Al-Mawali
- Tanzania - Peter Tuju
- Uganda - Isaac Mugume

Email assistance + remote access

Partial User support:

Like ...

```
[root at blade10 work]# ./runeu2de
  SETUP OF INT2LM
  INITIALIZATIONS
    Info about KIND-parameters:  i4      / MPI_INT =          4 1275069467
                                int_ga  / MPI_INT =          8 1275070513

  INPUT OF THE NAMELISTS
  *** NOTE: Old 10 digit date format is used for output files of INT2LM
  *** NOTE: Old 10 digit date format is used for input files of INT2LM
  *** Default specifications of input soil main levels are used ***
  *** Default specifications of LM soil main levels are used ***
  *** A new set for vcoord parameters is used:          -1
  *** A default set for refatm parameters is used:      1
  GRID ORGANIZATION
  *** ERROR: Coarse domain is not big enough in the east:
  *** ERROR: Coarse domain is not big enough in the east:
    endlon for coarse domain   : 205.000
    necessary lon for fine domain: 289.288
    endlon for coarse domain   : 205.000
    necessary lon for fine domain: 289.288
```

With solution ...

Hello Vanessa,

Cosmin already told you about the problem in the runeu2de-script with the dlon_in=0.625 instead of 0.0625. I tried to run the INT2LM with the corrected runeu2de and noticed another problem:

There is some missing specification. You did not specify the reference atmosphere irefatm, and the default still is the reference atmosphere 1. But this does not work with the tropical setup, going up to 30000.0 meters. In /LMGRID/ you have to specify:

```
ivctype=2, vcflat=15000.0,
irefatm=2, delta_t=90.0, h_scal=12000.0, t0sl=300.0,
vcoord_d = 30000.00, 28790.20, 27615.68, 26475.44, 25368.55,
           24294.12, 23251.30, 22239.28, 21257.28, 20304.54,
           19380.36, 18484.05, 17614.96, 16772.46, 15955.96,
           15164.86, 14398.63, 13656.72, 12938.63, 12243.87, etc.
```

and the second (red) line is the crucial one, where the reference atmosphere 2 with corresponding values are taken. Please insert this also in your runeu2de script to properly run the INT2LM.

Ciao
Uli

Email assistance + remote access

Full User support:

Like for Jordan...

The COSMO test at 7km resolution was done by me over a small domain: only 121x101 grid points! For the bigger domain (641x417 grid points) you will need a powerful computer. So, in the path `/home/jrm/cosmo_dwd/run` you could find:

```

|-- runicon2jordan (interpolation script ICON to COSMO-7km)
|-- run_cosmo_jordan (script for running COSMO-7km)
|-- icon (ICON input data - driving model) !!! ONLY THESE DATA YOU WILL GET DAILY FROM DWD!!!
| |-- igfff00000000
| |-- igfff00030000
| |-- igfff00060000
|-- topo
| |-- cosmo_africa_0.0625_1776x1617.g1 (file with the external parameters for COSMO model at 7km resolution)
| |-- icon_extpar_jordan_R03B07_20150805.nc (file with the external parameters for global ICON model)
| |-- icon_grid_jordan_R03B07.nc (file describing the horizontal ICON grid)
| |-- icon_hhl_jordan_R03B07.g2 (file describing the vertical ICON grid)
|-- cosmo_7_input (COSMO-7km lateral and boundary conditions you will get after running runicon2jordan)
| |-- laf2016051200
| |-- lbff00000000
| |-- lbff00030000
| |-- lbff00060000
|-- cosmo_7_output (COSMO-7km hourly forecast that you will get after running run_cosmo_jordan)
| |-- lfff00000000
| |-- lfff00000000c
| |-- lfff00000000p
| |-- lfff00000000z
| |-- lfff00010000
| |-- lfff00010000p
| |-- lfff00010000z
| |-- lfff00020000
| |-- lfff00020000p
| |-- lfff00020000z

```

Email assistance + remote access

The COSMO-support archives is available at

<http://mail.cosmo-model.org/bibermail/cosmo-support/>

Archive	View by:	Downloadable version
September 2016:	[Thread] [Subject] [Author] [Date]	[Text 110 KB]
August 2016:	[Thread] [Subject] [Author] [Date]	[Text 177 KB]
July 2016:	[Thread] [Subject] [Author] [Date]	[Text 184 KB]
June 2016:	[Thread] [Subject] [Author] [Date]	[Text 949 KB]
May 2016:	[Thread] [Subject] [Author] [Date]	[Text 71 KB]
April 2016:	[Thread] [Subject] [Author] [Date]	[Text 53 KB]
March 2016:	[Thread] [Subject] [Author] [Date]	[Text 116 KB]
February 2016:	[Thread] [Subject] [Author] [Date]	[Text 369 KB]
January 2016:	[Thread] [Subject] [Author] [Date]	[Text 730 KB]
December 2015:	[Thread] [Subject] [Author] [Date]	[Text 49 KB]
November 2015:	[Thread] [Subject] [Author] [Date]	[Text 166 KB]
October 2015:	[Thread] [Subject] [Author] [Date]	[Text 176 KB]
September 2015:	[Thread] [Subject] [Author] [Date]	[Text 302 KB]

COSMO trainings

**The 9th COSMO / CLM / ART Training Course 2016,
DWD, BTZ Langen 15 to 23 February 2016.**

(regular training)

- This training course is targeted towards new users from universities and research institutions (PhD-students, postdocs, etc.), from COSMO members and from other National Weather Services (NWS) - COSMO licensees or developing countries - who are running the model operationally.
- *Romanian team (Rodica DUMITRACHE, Amalia IRIZA) attended this course as trainers, for performing the practical exercises.*
- *Assisting the participants in implementing the COSMO model on DWD super computer and on their personal computers and running test cases for domains which covered their areas of interest*

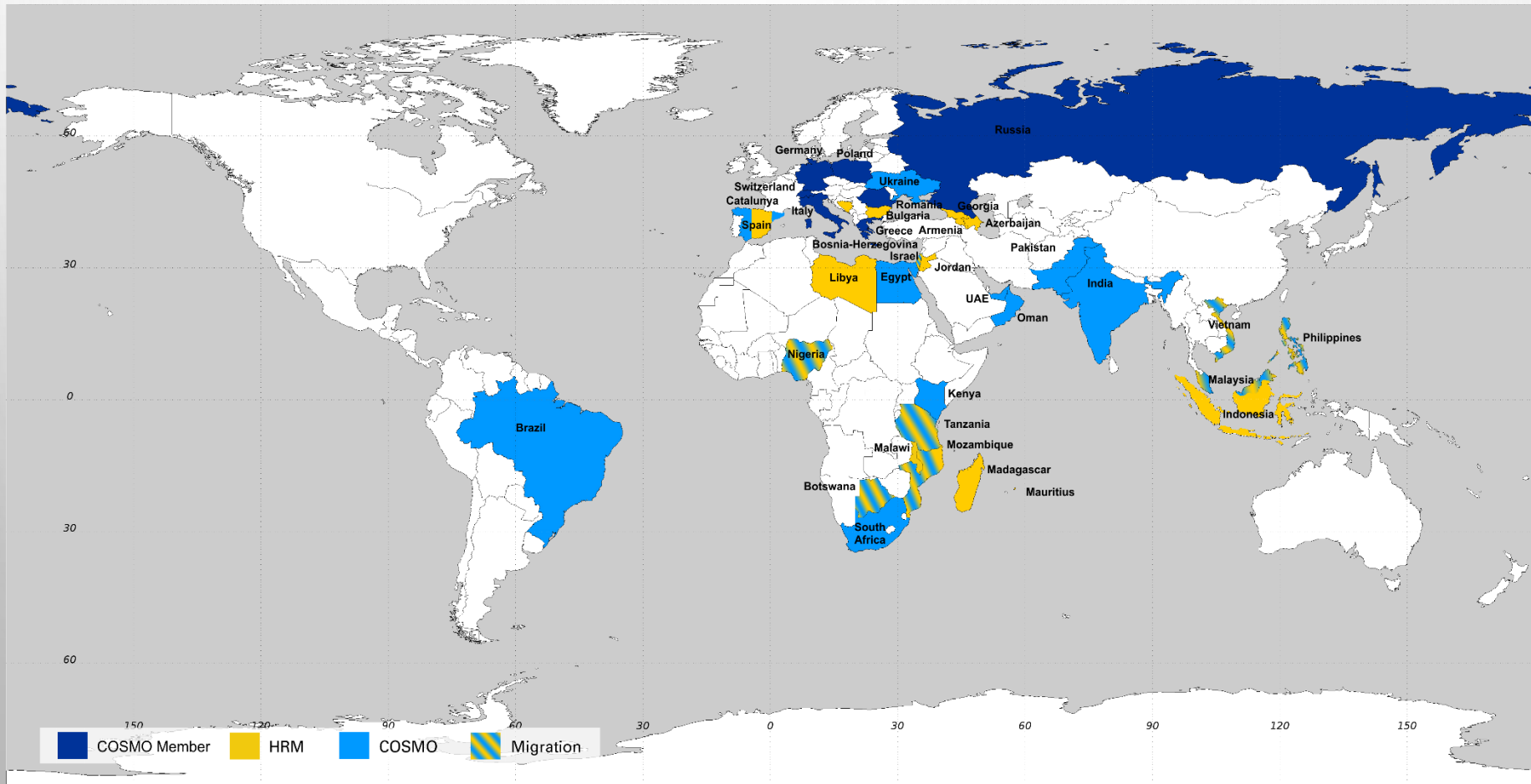
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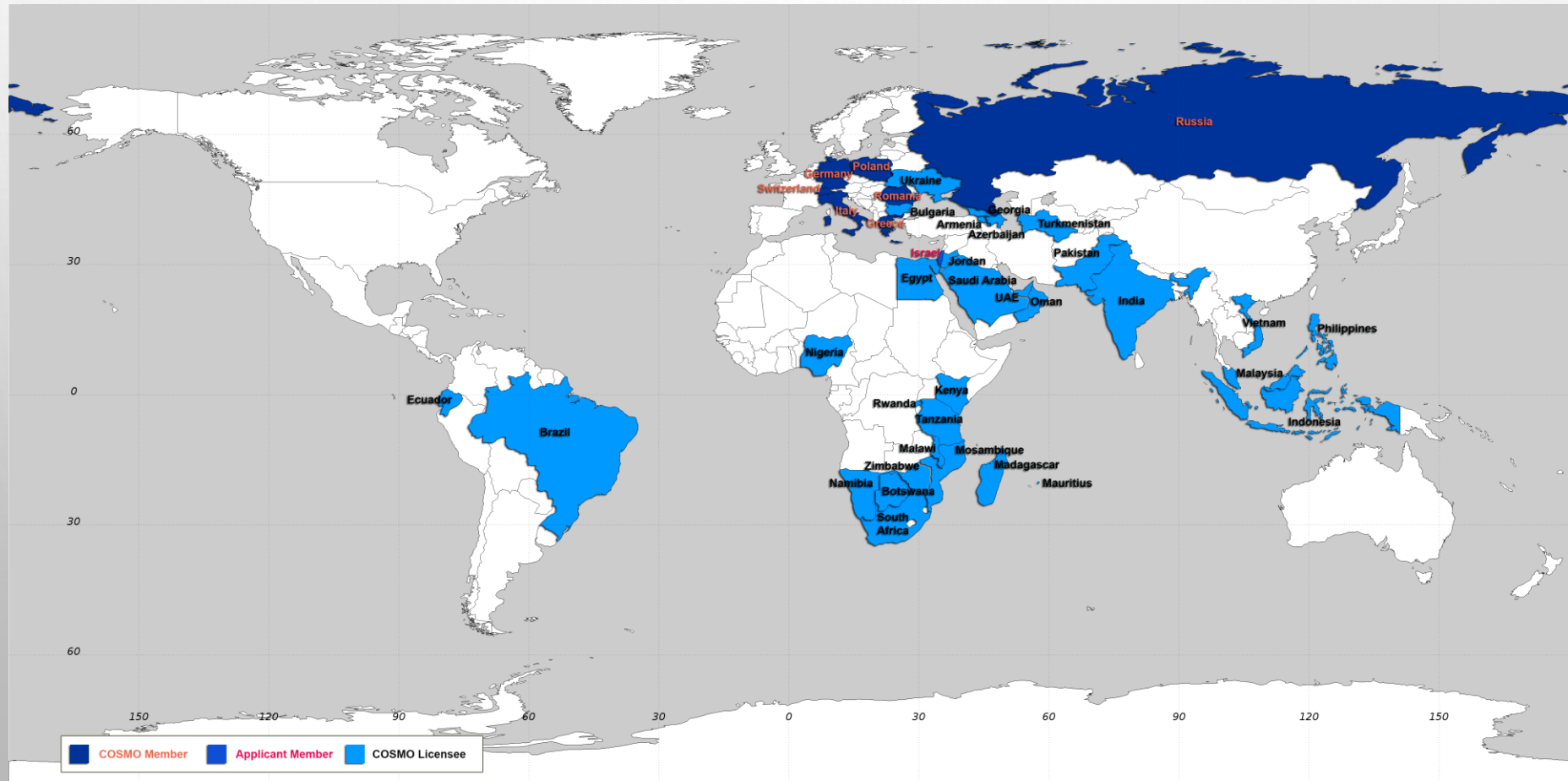
COSMO User support

The beginning: map of the model distribution until 2012



COSMO User support

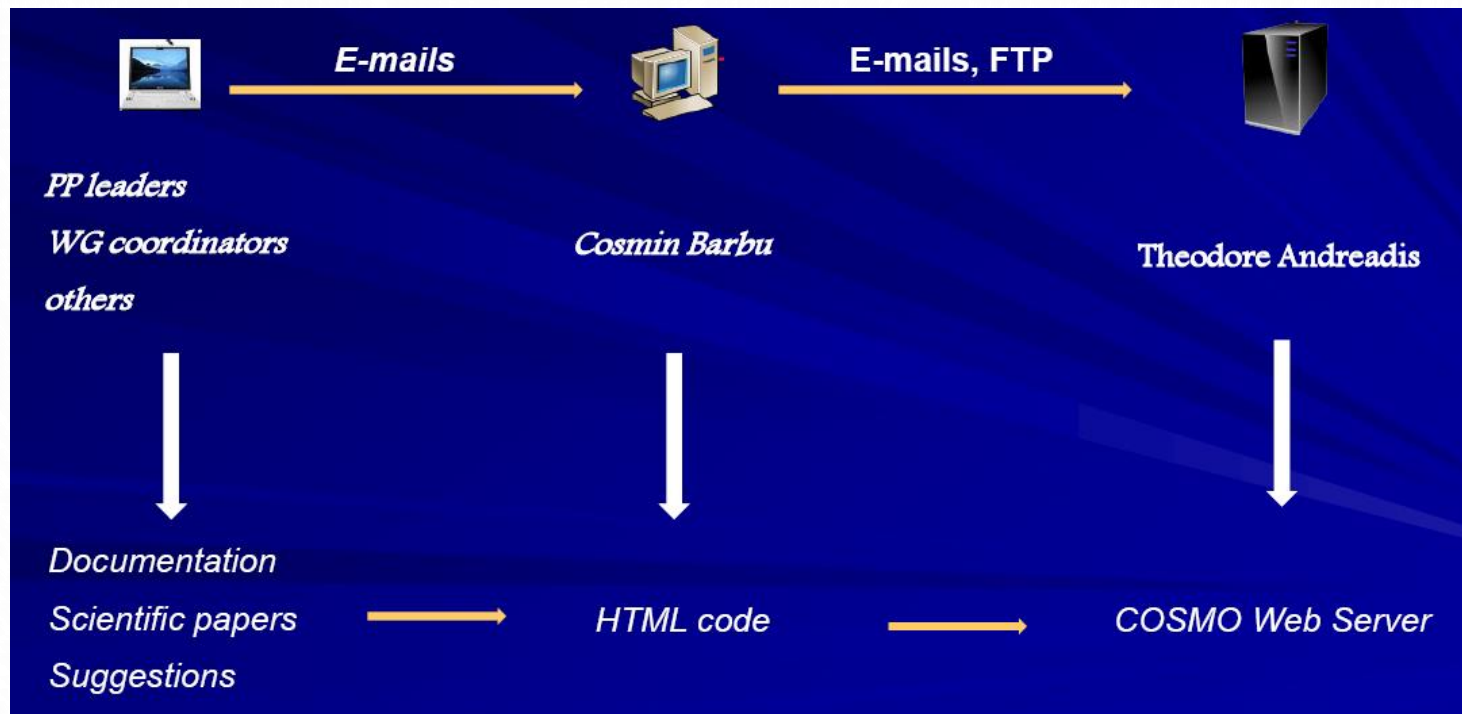
Nowadays: map of the model distribution in 2016



COSMO website activity

COSMO web team & work activity

- Massimo Milelli (ARPA Piemonte) – WG6 coordinator
- Theodore Andreadis (HNMS)
- ~~Cosmin Barbu~~, Bogdan Maco (NMA)
- others: PP leaders, WG coordinators, COSMO scientists



COSMO website activity

Work done 2015 – 2016

(regular / on-going activity)

Pages which have been / have to be updated:

- The minutes of STC & SMC meetings
- The minutes and presentations of the workshops, tutorials
- Fieldextra 12.3.1 version – see Cosmo utilities software section
- STC's Strategy on verification tools
- Newsletter no. 16
- COSMO strategy, science plan and reports

COSMO website activity

Work done 2015 – 2016

(regular activity)

The 16th COSMO newsletter:

- WG3b – 2 contributions
- WG4 – 1 contributions
- WG5 – 1 contributions
- WG6 – 1 contributions
- WG7 – 1 contribution

Editing done by Mihaela Bogdan (NMA)



Conclusions:

- COSMO model run successfully with ICON input data in most countries which asked for assistance;
- The training activities help potential users to get better acquainted with the COSMO model;
- All these activities can improve the communication between the COSMO consortium and the users of the model;
- Romania is able to go on providing support in implementing the COSMO model to new users in 2016 – 2017 and participate with permanent activity in the “*SuPpoRT Activities*” task.

Thanks for your attention!

QUESTIONS?!