WG6: news about our activities

Massimo Milelli and colleagues

14 September 2022, 24th COSMO General Meeting

WG6 Wednesday 14 September

09:55 – 10:40 Massimo Milelli WG6, NWP Test suite, LEPS, COSMO Web, PP IMPACT (Xavier)

11:00 – 11:20 Uli Schättler ICON/COSMO SCA

WG6 Thursday 15 September

09:30 – 10:00 B. Maco, D. Rieger PP C2I4LC, PP C2I

NWP Test Suite

- New version 2.6.5 with ecrad, top nudging, bug fix corrections to be tested against 2.6.1 this fall

- Almost no SBU used this year

- Now soil from ICON global. ICON-EU to be checked (domain problem)

- Multi-thread could be used on Atos but not yet with ecrad

- New reference period for testing (now 2017)?

Documentation

- TechReport N°44 (PP CDIC final report) has been published

- TechReport N°45 (PP APSU final report) has been published

- TechReport N°46 (PP CARMA final report) has been published

- The 21st NewsLetter has been published

- The consortium 2021 progress report has been published (by Yoav and Christoph)

- Expected TRs during the next COSMO year (09/2022-08/2023): PP KENDA-O, PP AWARE, PP CALMO-MAX, PP C2I, PP MILEPOST

- DACE user manual to be updated

Software

- After 23 years, the final Cosmo and Int2lm versions have been released. See their release notes: Cosmo v5.14/6.0 and Int2lm v2.9/3.0

- The latest EMVORADO user guide has been uploaded

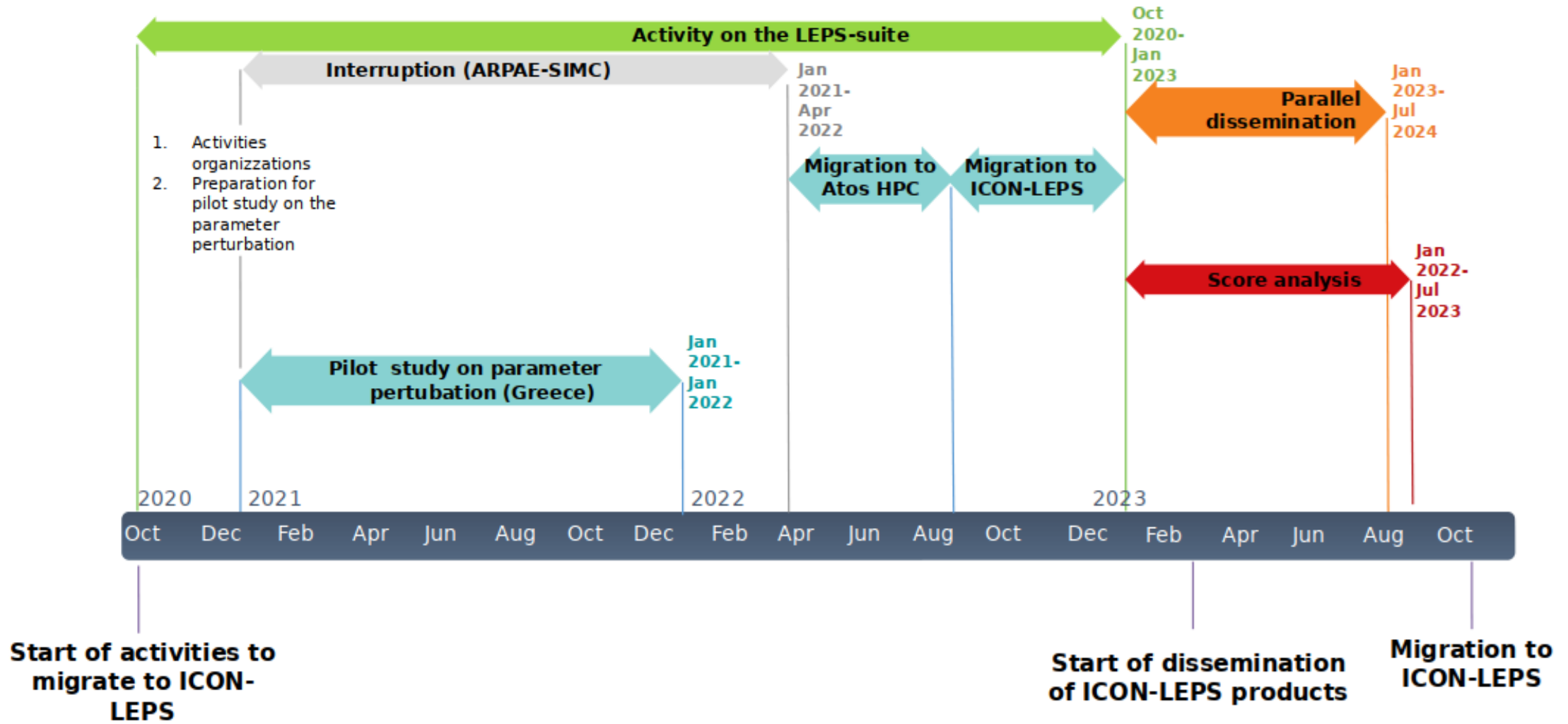- FieldExtra ver 14.0 is available to download

Web

- it has been placed @HNMS computer room and we expect to be switched on by the end of September (or early October)
- after being switched on, it will be setup within a month (OS and software)
- it is a DELL PowerEdge R630 with 256GB memory and 14 dual core 2,60GHz Xeon CPUs
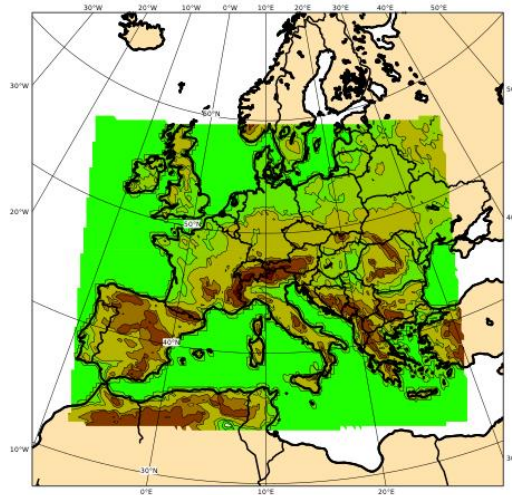
ICON-LEPS

- COSMO-LEPS up and running @ATOS -> SBU (estimated) similar on cca and Atos
- more SBU are used by ICON-LEPS with respect to COSMO-LEPS (same domain, same resolution). But COSMO is single_p and ICON is mixed_p (it is now and it will be ever). There is a factor of 1.6
- Consider that IFS EPS will be @9km horizontal resolution in few months and @5km by 2025
- The amount of our SBU will increase @Atos by a factor ~4

Migration to ICON-LEPS

@7km/40VL

Model	HPC machine	Precision	Model version	#tasks	dt	Elapsed time	SBU (per 1member)
COSMO	Cray (Reading)	Single	5.03	720	66	570s (9.5min)	1861
	Atos (Bologna)	Double	6.0	720	66	1071s (18min)	4385
	Atos (Bologna)	Single	6.0	720	66	~ 428s (7min)	~ 1754
ICON-LAM	Atos (Bologna)	Mixed	2.6.5	576	60	878s (14.5min)	2988

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CUR (closest to COSMO-LEPS)

MED (+ Is, full UK)

PAN-EU (+ Scandinavia, Ukraina but not Turkey).
In this case SBU provided by Scandinavian countries

https://www.efas.eu/en

European Flood Awareness System

ICON-LEPS

Domain	Horizontal Resolution	Vertical resolution	time step	SBU (per member)	SBU/ year (per 10 members, 1run/day)	SBU/year (per 20 member, 2 runs/day)
CUR	R3B7 (~6.5km)	40	60s	2988	10.9 millions	43.6millions
MED	R3B7 (~6.5km)	40	60s	4951	18millions	72 millions
PANEU	R3B7 (~6.5km)	40	60s	6428	23.5millions	94 millions
CUR	R2B10 (~2.5km)	65	24s	81767	298 millions	1193 millions
MED	R2B10 (~2.5km)	65	24s	133490	487 millions	1948 millions
PANEU	R2B10 (~2.5km)	65	24s	~175903	~642 millions	~2568 millions

CONSORTIUM FOR SMALL SCALE MODELING
COSMO

ICON-LEPS

Domain	Horizontal Resolution	Vertical resolution	time step	SBU (per member)	SBU/ year (per 10 members, 1run/day)	SBU/year (per 20 member, 2 runs/day)
CUR	R2B10 (~2.5km)	50	30s	50706	185 millions	740 millions
CUR	R2B10 (~2.5km)	65	30s	66139	241 millions	965 millions
CUR	R2B10 (~2.5km)	65	24s	81767	298 millions	1193 millions
MED	R2B10 (~2.5km)	50	30s	82781	302 millions	1208 millions
MED	R2B10 (~2.5km)	65	24s	133490	487 millions	1948 millions

ICON-LEPS

- Different options/configurations will be considered

- Discussion is ongoing @SMC level

- Users opinion is also needed

Thank you all for your work!

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