



**2<sup>nd</sup> Joint ALADIN General  
Assembly / HIRLAM Council**  
**8<sup>th</sup> December 2016**  
**Darmstadt, Germany**



## **Draft Minutes**

### **1. Opening and welcome**

The ALADIN GA Chair (Martin Benko) and the HIRLAM Council Chair (Marianne Thyrring) opened the meeting at 14:00 and welcomed the participants (see Annex 1), specially those attending for the first time and the observer (Mrs. Florence Rabier for ECMWF). They decided on a co-chairmanship of this joint ALADIN General Assembly / HIRLAM Council (GA/C).

### **2. Adoption of the draft agenda**

The proposed agenda was adopted.

### **3. Approval of the minutes of the 1<sup>st</sup> Joint ALADIN GA/HIRLAM-C**

The GA/C unanimously approved the minutes (\*) of their first joint meeting held in Reading on 2<sup>nd</sup> December 2014.

### **4. Report from the 4<sup>th</sup> Joint HAC/PAC meeting**

The HAC chair (Heiner Körnich) reported on the joint HIRLAM Advisory Committee / ALADIN Policy Advisory Committee (HAC/PAC) meeting. The joint HAC/PAC discussed the new joint ALADIN-HIRLAM cooperation agreement and recommended its adoption. For the current branding, HAC/PAC recommended to use “the ALADIN-HIRLAM shared system” as a name for the common system and to use “HARMONIE-AROME” for the HIRLAM reference system. A subgroup from HAC/PAC was delegated to work on the definition of the common codes. The discussion on the joint governance and on the joint branding of the future single consortium was postponed to the next HAC/PAC meeting where a roadmap would be discussed. See (\*) the provisional minutes of this meeting for more details.

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(\*) A copy of the presentations of the 2<sup>nd</sup> Joint ALADIN GA/HIRLAM-C, some preparatory documents and some photos are available on the ALADIN website : <http://www.umr-cnrm.fr/aladin/spip.php?article308>.

## 5. Governance issues

### 1. Follow-up of the joint declaration

Marianne reminded the purpose of the 2014 joint declaration : to produce the best possible operational mesoscale weather forecasts, thanks to a jointly developed and maintained best possible skilled limited area weather forecasting system, governed by a single consortium. In 2014, the difficult points in building this future single consortium by 2020 were identified and summarized in five bullets. The PMs were asked to work on finding answers to these bullets and to report on their progress at the GA/C.

Marianne gave the floor to Piet who reported for both PMs :

- *ownership* : a review team was mandated by HAC/PAC to establish a list of the common codes, with the identification of the ALADIN and the HIRLAM contributions to these common codes; the review team established a provisional list of these common codes but concluded that the quantification of each consortium contribution could not be estimated from values such as the number of lines of code, and proposed to rather measure contributions in term of manpower contribution to the code evolution.
- *data policy* : the outcomes of the discussions have been implemented in the proposed new ALADIN-HIRLAM cooperation agreement; the signature of the agreement would answer this bullet.
- *global picture of annual contribution of countries per various type of activities* : such statistics exist in ALADIN (accumulated manpower data since the beginning of ALADIN) and define the voting rights and the ownership of the ALADIN code (as written in the ALADIN MoU5); the breakdown of the accumulated manpower gives a roughly balanced share between the three components of ALADIN (1/3 LACE, 1/3 Météo-France, 1/3 flat-rate Partners).
- *identification of common activities and specific activities* : a methodology was approved by HAC/PAC; a first list exists; it should be consolidated and made visible in the common Work Plan in 2017; it is proposed that the details are left in the hands of the PMs and the HAC and PAC chairs.
- *branding* : it was proposed that this discussion would take place when everything else is solved.

Piet concluded that the first step was the signature of the ALADIN-HIRLAM cooperation agreement. Afterwards, a more detailed roadmap for assessing the four remaining bullets would be provided to HAC/PAC.

Marianne thanked Piet for his explanation on how the PMs work on the bullets and took note on their first achievements. She encouraged them to go on and prepare a more detailed proposal. The next GA/C will have the opportunity to decide on it at their next meeting in 2017.

Gerard van der STEENHOVEN gave credit to Olivier Gupta (former Météo-France deputy-Director) for the important role he had played in bringing together two consortia with different backgrounds, cultures and ways of working, and his wisdom when proposing a step by step approach of the convergence issues. Gerard congratulated the PMs for the work already done and urged them to start exploring aspects of the convergence beyond the five bullets of the common declaration.

Philippe Bougeault, on behalf of Météo-France, thanked the PMs and acknowledged the pressure

added by this convergence process on the PMs shoulders.

The GA/C is confident that the the merge into a single consortium is on-time for the end of 2020.

## 2. ALADIN-HIRLAM Cooperation Agreement

Marianne thanked Philippe for his very good piece of work when preparing the text of the agreement. She expressed her gratitude to the ALADIN members who had made significant steps toward HIRLAM positions, specially in the chapter 8. She reminded that both individual assemblies (ALADIN General Assembly and HIRLAM Council) had already discussed and approved the current wording of the document (version V6, distributed as preparatory document). She opened the floor for further comments.

Florence Rabier commented that the text had just been checked at ECMWF (ECMWF is implicitly a partner as they share the code with ALADIN-HIRLAM). Their only proposal was to reference the new ECMWF-MF agreement on ARPEGE-IFS, instead of the former one that was attached to previous ALADIN-HIRLAM agreement.

Philippe proposed to attach the text of the new ECMWF-MF agreement to the new ALADIN-HIRLAM Cooperation Agreement. The GA/C approved and Patricia modified the text accordingly (this last version is available on-line<sup>(\*)</sup>).

The GA/C was unanimously in favour of signing this last version of the ALADIN-HIRLAM Cooperation Agreement. The agreement was signed by the chair persons of the ALADIN GA and the HIRLAM-C (all delegations received afterwards a scanned copy of this signed agreement).



*ALADIN-HIRLAM cooperation agreement signing by M. Benko and M. Thyrring (with the Program Managers, P. Termonia and J. Onvlee, and P. Bougeault from MF)*

## 6. Reports

### 1. Progress and plans at ECMWF

Florence reported (\*) on the progress and on the 2016-2025 strategy at ECMWF, with respect to the code and the outputs, both being shared with the ALADIN/HIRLAM Partners.

- The pathway of operational advances aims to a full earth system modelling, assimilation and predictability, with an ocean-atmosphere coupled system used across all ECWMF forecasting systems. The last version of the code (cycle CY43R1) benefits from an increase of the horizontal resolution (4 times more) and the vertical resolution (50%) in the Ensemble Forecast System, an ocean-atmosphere coupling, the animation of the sea-ice component, ... with positive impacts on the tropical cyclones energy, the cloud cover, ... The DA is still done separately within the atmosphere and within the ocean and the next step is to build a coupled DA.
- The WMO verifications show good scores of precipitation, both for deterministic and ensemble models, but the extreme forecast indexes from ensemble models prove to be much better and the ECMWF strategy gives the priority on the ensemble forecasting.
- ECMWF sustains high performance computing, through a scalability collaborative approach and programs where the ALADIN-HIRLAM Partners are very active. For instance, the OOPS program is a long but necessary work to rewrite parts of the IFS/ARPEGE code to make it more flexible and improve the readability of the code.
- In 2016, ECMWF successfully applied to external proposals (H2020) and got additional staff and funding.
- Some progress in environmental services (delivering an enhanced re-analysis and improved atmospheric composition forecasts).
- ECMWF forecast data is distributed to its Member and Co-operating States via the RMDCN, for which a contract has been approved making it faster for the same price
- As for the localisation of the future ECMWF data centre, the decision will be taken by an Extraordinary Council on 28<sup>th</sup> February 2017.

### 2. Progress and plans at Météo-France

Claude reported (\*) first on the last operational changes (code version cycle CY41T1) and e-suites in ARPEGE and AROME :

- For ARPEGE, two important changes in the physics (implementation of the surface scheme SURFEX and of a new convection scheme), an increase of satellite radiances in the DA (new satellites, denser data, new channels), ... permit an improvement of the representation of the daily cycle in convection and have a positive impact on precipitation forecast, wind gusts, .. Both objective (scores with respect to RS and ECMWF analysis) and subjective (ARPEGE performance index) scores show a significant improvement.
- The regional version (AROME) changes simultaneously with ARPEGE (same increase of satellite data) and has benefited for additional improvements (new cloud optical properties, first coupling with ocean 1D scheme in the overseas versions of AROME, ...) and various code and system optimisations, with positive impacts on the elapsed time (time it takes to get a forecast). The scores based on the accuracy of the precipitation and the wind gust show the benefit of the AROME forecast with respect to ARPEGE or IFS. The AROME-overseas prove additional value on tropical cyclones with a good simulated brightness temperature

(and a right trajectory of the eye of the cyclone ).

- Besides the AROME overseas, other new applications are based on AROME: the AROME-PI (AROME-nowcasting system) runs operationally since March; the PEARO (convection-permitting EPS) is pre-operational and already very promising (added value on precipitations forecasts with respect to the global ARPEGE EPS).

Main developments in 2017/2018 will be around an AROME-EDA (Ensemble Data Assimilation), new data assimilation methods (EnVar replacing 4DVar), improved assimilation of aircraft data and satellite radiances (including in cloudy conditions), new surface and microphysics schemes in the physics, coupling with ocean and wave models,...

At the same time the ensembles (ARPEGE-EPS and PEARO) will be run operationally 4 times a day and the horizontal resolutions will be increased for ARPEGE (about 5km over Western Europe), as well as for global ARPEGE-EDA and the ARPEGE and AROME EPS systems. A quite significant effort on recoding of the common code is also expected, taking into account the outcomes of OOPS, COPE, ESCAPE ... projects.

Météo-France aims at upgrading its HPC system in 2019 : the preparations have started, including discussions with governmental bodies to establish if possible an increase of the HPC funding.

### **3. Link with other European programs (EUMETNET, ESCAPE)**

Piet summarized the action of the ALADIN/HIRLAM NMSs in the H2020 funded project ESCAPE (Energy-efficient Scalable Algorithms for Weather Prediction at Exascale), that aims to develop world-class, extreme-scale computing capabilities for European operational NWP and future climate models. The ALADIN/HIRLAM partners are particularly active in the Work Package 4 (that develops benchmarking strategies to gauge code efficiency and energy consumption for regional and global NWP applications on heterogeneous hardware architectures at scale).

Martin thanked Piet for his short presentation and acknowledged the importance of these projects for the ALADIN and HIRLAM consortia.

## **7. Date and place of the 3<sup>rd</sup> joint ALADIN GA / HIRLAM Council**

The tradition in ALADIN is that the ALADIN GA meets once a year in an ALADIN country (on a rotational basis), whereas the HIRLAM Council meets twice a year, besides another meetings (such as ECMWF Council or EUMETSAT Council). As a compromise, it is agreed to organise the joint meeting every second year according to the each consortium habit.

On the kind invitation of the Polish delegation, the GA/C agreed to meet in 2017 in Cracow (Poland), according to the following schedule :

- Tuesday 21 November morning : ALADIN GA,
- Tuesday 21 November afternoon : LACE and HIRLAM councils in parallel,
- Joint dinner on Tuesday evening,
- Wednesday 22 morning : joint ALADIN-HIRLAM meeting.

## **8. A.O.B**

None.

## **9. Closing**

The chairs thanked the GA/C for the fruitful discussions and closed the meeting at 17:00.

## Annex 1 : Participants

COUNTRY	NMS	Participants
ALGERIA	ONM	HAMADACHE Bachir, MOKHTARI Mohamed
AUSTRIA	ZAMG	WANG Yong
BELGIUM	RMI	GELLENS Daniel
BULGARIA	NIMH	GEORGIEV Christo
CROATIA	DHMZ	STRELEC MAHOVIĆ Nataša
CZECH REP	CHMI	DVOŘÁK Václav BROZKOVA Radmila (PAC)
DENMARK	DMI	THYRRING Marianne, KRARUP LETH Ole
ESTONIA	EEA	
FINLAND	FMI	NIEMELA Sami
FRANCE	MF	DEBAR Anne, BOUGEAULT Philippe FISCHER Claude (CSSI)
ICELAND	VI	SNORRASON Arni
IRELAND	Met Eireann	MORAN Eoin
HUNGARY	HMS	BONTA Imre
LITHUANIA		
MOROCCO	DMN	NASSIF Abdallah, HADDOUCH Hassan
NETHERLANDS	KNMI	van der STEENHOVEN Gerard
NORWAY	Met.no	KRISTIANSEN Jørn
POLAND	IMGW	SKAPSKI Roman, BOCHENEK Bogdan
PORTUGAL	IPMA	VITERBO Pedro
ROMANIA	NMA	MATEESCU Elena, TASCU Simona
SLOVAKIA	SHMU	BENKO Martin
SLOVENIA	EARS	BERGANT Klemen
SPAIN	AEMET	BELDA Fernando
SWEDEN	SHMI	NILSSON Stefan, AARHUS ANDRÆ Bodil KÖRNICH Heiner (HAC)
TUNISIA	INM	
TURKEY	TSMS	DALKILIC Tayfun
ALADIN / PM		TERMONIA Piet
ALADIN / ST		POTTIER Patricia
ECMWF observer		RABIER Florence
HIRLAM / PM		ONVLEE Jeanette