Czech Republic Slovenia Croatia France Slovakia Spain Bulgaria Hungary Romania Austria Poland Morocco

ALADIN

Newsletter

Number 4 July-August-September 1996

This Newsletter presents you the principal events concerning ALADIN during the quarter of year mentioned above.

The news about work or events outside Toulouse are related with informations that you sent, and essentially deals with the "deported" work during the previous quarter of year.

These informations (and others) are available on a public ftp : cnrm-ftp.meteo.fr, *under the directory* /pub-aladin

Please do bring to my notice anything that you would like to be mentioned in the Newsletters.

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Main events

Traditionally, the third quater of the year remains rather quiet, as it covers July and August. But in September, an intense activity took place again : stagiaires back from holidays, conference ICAM 96 in Bled (Slovenia), workshop "ALADIN on workstation" in Ljubljana (Slovenia) and conference EWGLAM/SRNWP in Dublin (Ireland)

Conferences/Workshops

1. ICAM 96

The 24th International Conference on Alpine Meteorology took place in 1996 in Bled (9th to 13th September, Slovenia). The ALADIN team was well represented, with 7 contributions, including the invited lecture of J.-F. Geleyn. The other speakers were D. Banciu, N. Brzovic (twice), G. Gregoric, J. Hoffman, M. Zagar. For more information about this conference, please ask the speakers or have a look on the proceedings published by the Hydrometeorological Institute of Slovenia which organised ICAM96.

2. *Workshop "ALADIN on workstation"*

In the continuity of ICAM96, a workshop about the use of ALADIN on workstation took place in Ljubljana. About 30 people attended the lectures prepared for the workshop, including generalities about ALADIN, technical developments and adaptations, visualisation tools, scientific studies and finally a presentation of the use of NWP winds as forcing to the Adriatic Sea in Bora cases by Pr. Orlic from Zagreb. The workshop ended with a round table on future activities concerning the workstation version of ALADIN.

This round table led to the following conclusions and actions :

CONCLUSIONS:

1. The organization of such a workshop is very important for those working on the workstation version of ALADIN.

2. The participations on the workshop should be open any interested people around ALADIN and as well outside the LACE community.

3. It is crucial to investigate the proper ratio between the resolution of the coupling model and the coupled one for the full understanding of the limits of application of the workstation version of ALADIN.

4. A reference version is needed for the workstation versions of ALADIN. Ideally it should be very near to the CRAY version.

5. More coordination is needed between the different groups working on the workstation version.

6. A better exchange of information is necessary.

7. It is encouraged to install a workstation for the workstation version of ALADIN in the telecommunication center of RC LACE (Vienna) for post-processing purposes.

8. Deeper scientific work can start on the workstation version after the final establishment of the proper technical conditions.

ACTIONS:

1. Compilation of the proceedings of the workshop.

2. Compilation of modifications needed for the application of workstation version for DEC and SUN platforms. This is needed for the creation of the reference version.

3. Based on the list of point 1., the estimation of time and manpower needed for the creation of the reference version in Toulouse.

4. Proposition for the responsibilities of the coordination group around the workstation version.

5. Collection of the information around the works performed on the workstation version for inclusion to the ALADIN Newsletter.

6. Working starting on the determination of the acceptable ratio between the coupling model and the coupled one.

More details about the workshop can be found in the proceedings collected by our Slovenian colleagues and distributed to the participants.

3. *Conference EWGLAM/SRNWP*

The traditional EWGLAM meeting was organised in 1996 in Dublin by Met Eireann. As usually, we could listen to national presentations, scientific ones and presentations from the main LAM groups in Europe (five presentations in 1996 instead of four in 1995 : HIRLAM, UKMO, DWD/SMS, ALADIN and LACE as newcomer). For more information about this conference, you can refer to the proceedings which should be available in early January 1997.

Money Funding asked for some cooperations based on the ALADIN project

1. *INCO-COPERNICUS keep-in-touch, so-called ''ALADIN-KIT''*

The proposal has been well evaluated and we are in the process to a final acceptance by the end of 1996.

2. *''Réseau Formation Recherche'' : PhD Studies*

- Mihaela CAIAN has continued the redaction of her thesis : "Maille variable ou domaine limité : quelle solution choisir pour la prévision à échelle fine ?" . Unfortunately, the defence had to be postponed from September, 27th to November, 23rd of 1996.
- Doina BANCIU has started her study about physical parameterisations : behavior at high resolution and tuning.
- Filip VANA has also started his study about kinetic energy spectrum in a semi-Lagrangian model.
- Marta JANISKOVA is continuing her work on a simplifed and differentiable physical package.

3. *Embassies support*

Fundings from the Ministery of Foreign Affairs have been made available late in 1996. This is the reason why a large number of visitors were expected during the last four months of 1996, and the first quarter of 1997. Countries benefiting currently from this type of fundings are : Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia.

The (pre-) operational ALADIN models on big computers

1. Pre-Operational test on ALADIN-FRANCE in Météo-France

The pre-operational phase of ALADIN-FRANCE is running well. The french forecasters have now the results available on the "SYNERGIE" system.

2. Pre-Operational AL BACHIR suite in Maroc-Météo

The pre-operationnal suite "Al Bachir" has started in March, with the characteristics that have been described int the previous newsletter (number 3).

3. Pre-Operational ALADIN-LACE in Météo-France

ALADIN-LACE has been successfully implemented on the machine J916 in Toulouse. It is now running daily, since July 1st.

3.1 Changes in the Operational Suite :

Since September 23rd, 1996 at 12 UTC, the library used has included spectral packing for ALADIN history files : an essential point for an economic transfer of history files to Vienna (for archiving purposes), and also for an economic transfer of coupling files to Romania and Slovenia (for the workstation versions). Before, a parallel suite had been run : it showed that no degradation of the scores could be noticed.

In parallel, the export of the model raw data from Cray binary format to IEEE big-endian binary format was prepared and raw data are ready for transmission to RC-LACE TelArc Centre in this format. However RC-LACE TelArc Centre is not yet ready to receive and archive raw data, and the transmission to Vienna is not executed.

3.2 Archiving :

Raw ALADIN/LACE data are archived on research accounts of Toulouse Team personnel. This situation will last until RC-LACE TelArc Centre is ready to archive raw data (expected in the beginning of 1997). Because of the non-homogenity of the archive in the first 8 days of July 1996, and because of a mistake (no archive of the fluxes in July 1996 and in the first half of August 1996), the Toulouse Team has rerun the model for this period (from 1st July 1996 12 UTC to 19th August 1996 00 UTC).

3.3 Control and Monitoring :

Scripts for verifications against observations have been developped. They use the new verification software VERIFPACK. This software is based on the observation control part of CANARI, the analysis code operational in Meteo-France. Developed by the control and monitoring team of Meteo-France, it will be from now onwards the tool used by the ALADIN team, instead of the previous one called VERAL (by Doina Banciu), the spirit of which it took for the general structure and data flow.

The verification of ALADIN/LACE operational forecast is executed as a part of the suite since the end of August 1996. Verification of August 1996 forecasts has been done manually . Verification of July 1996 is missing (the verification tool was not yet available). In the verification procedure some mistakes and insufficiencies have been pointed out and fixed. Fortunately these mistakes were present mostly in the graphic presentation of the scores and not in their computation, so the evaluation of results of parallel suites run in summer remains correct. The verification procedure will be maintained by the Toulouse Team. The same verification procedure will be used also for research on the ALADIN project.

New graphical visualisation softwares were written for plotting the behaviour of the bias and the standard deviation of the model and as well as like before some "pressure-time" contouring diagrams can be visualized.

The monitoring consists, first of all, in a daily control of the operational model, with messages in case of failures or delays. Also the transfer of the products to Vienna is monitored on regular basis. The ECMWF-Vienna line has been effectively upgraded on August 9th. Since this date, the products have been reaching Vienna at around 04 UTC and 16 UTC .

The consumption of CPU is also monitored.

3.4 Parallel Testing Suite :

ALADIN-LACE with a coupling frequency of three hours has been tested. This suite has been run during 10 days. The results are not very clear ; it seems that such coupling does not bring too much benefit into the model results, so some further investigations are needed on this topic.

3.5 Developments :

- A plan for "variational in ALADIN" has been prepared by LACE 's "scientific officer" ; the preliminary task was to develop the tangent linear (TL) and adjoint (AD) versions of the newly rewritten spectral transforms in the code of ALADIN (to stick with the code of ARPEGE).
- Creation of "forecasted satellite images", computed from ALADIN, by adapting what has been previously developed for ARPEGE. Further work on a visualisation software usable at any other place than Toulouse should be investigated.

The (pre-) operational ALADIN models on workstations

1. Pre-Operational suite in Romania

The model ALADIN has been integrated on Romanian-Bulgarian area since April 1996.

During periods of time in May an June, pre-operational integrations have been done, and case studies have been investigated. Many problems have been solved late in the second quarter of the year.

During the third quarter, the system is intended to be pre-operational (daily run) and it should become fully operational during the last quarter of 1996.

2. Activities concerning the workstation version of ALADIN in Slovenia

ALADIN on WorkStation became a reality in Slovenia in August 1996, when the first successful run was made, two months after availability of the code. Transport of coupling files from Meteo-France on an operational basis via Internet was established. There were a lot of efforts dedicated to the visualization of ALADIN results : an interface between FA files and the interactive visualization system VIS5D was developed. Very first case studies about the behaviour of ALADIN on a relatively small domain were made. The first conclusion was that the workstation version could be useful for operational purposes.

Deported developments during the second quarter of 1996

1. In Austria

- evaluation of ALADIN forecasted precipitations and 2 meter temperature (H. Seidl, K. Von der Emde, G. Hermann, Y. Wang)
- Lectures of Zentralanstalt für Meteorologie und Geodynamik (ZAMG) at the ALADIN workshop in Bratislava, June 25-26 1996 :

  - "Current research using ALADIN data : pseudo water vapor imagery, test of a new humidity interpolation approach, Richardson number analysis" (A. Jann)

  - "The operational use of of ALADIN products at ZAMG" (H. Gmoser)

  - "Verification of ALADIN data in comparison with ECMWF data and other products"(H. Seidl and K. Von der Emde)

2. In Bulgaria

- Preliminary work about verification of ALADIN precipitations and pseudo-TEMPs (P. Neytchev, N. Neykov, A. Bogachev, V. Spiridonov)

3. In Croatia

- HRID : 1-D analysis od stability laps rate routines, verification and documentation (D. Glasnovic) ; adaptation for ALADIN-LACE (N. Brzovic) ; extrapolation scheme (D. Klaric).
- Decoding and archiving : adaptation for ALADIN-LACE (N. Brzovic, I. Ihasz from Hungary)
- Visialisation : adaptation for ALADIN-LACE ; GRADS (J. Smitlehner)
- Forest Fire Protection Model : orography for raw data (I. Ihasz from Hungary) ; verification of surface data and orography (D. Klaric) ; comparison of surface data set : interpolated and raw (M. Mokoric).

4. In Czech Republic

- Visualisation of GRIBs (M. Janousek)
- processing and visualisation of TEMPs (J. Sokolova)
- Development of derived products from prognostic TEMPs (F. Vana)

5. In Hungary

- Duties as PSO of RC-LACE (A. Horanyi)
- preparation of receipt of new GRIB files coming from the new operational model in Toulouse from July 1st, at HMS : change of domain, extension of time range, change of the visualisation system, etc. Forwarding ALADIN information to Zagreb (I. Ihasz)

6. In Morocco

- Preparation of the operational suite with 16 km resolution ("ALBACHIR" forecasting suite)

7. In Poland

- Nothing this quarter

8. In Romania

- Implementation of the workstation version of ALADIN, and preparing the new operational numerical weather prediction system of romanian institute (D. Banciu, E. Cordoneanu, L. Dragulanescu, V. Ivanovici, M. Caian, C. Dutescu)
- Implementation and adaptation of HRID, and completion of documentation (D. Valianatos, C. Soci)

9. In Spain

- familiarization with data assimilation, and exploring the softwares of CANARI and FULLPOS (J. Calvo Sanchez and J. Orbe Zalba)

10. In Slovakia

- Visualization of fields (O. Spaniel, P. Wolek, M. Gera)
- Implementation of HRID for running on SUN HS21 (P. Wolek)
- Data collection (O. Spaniel, R. Zehnal)

11. In Slovenia

- Visualization of fields by PAGB, Chagal (G. Gregoric, J. Jerman)
- HRID diagnosis on Pseudo TEMPs (N. Pristov)
- ALADIN versus workstation (M. Zagar, J. Jerman)
- Data collection (M. Mencej)

12. Deported work by Météo-France

- Visit of P. Le Moigne in Ljubljana, in the framework of the cooperation between France and Slovenia.

ALADIN developments in Toulouse

1. Scripts and libraries :

- The effort to achieve the cycle 6 went on. But this operation is late regarding the initial planning.
- V. Saravane and J.-F. Estrade have progressed in the distributed memory version of the code, to prepare ALADIN for the incoming new generation of supercomputers.
- Workstation version : It has been tried to implement ALADIN on HP workstation. Unfortunately, this operation could not be achieved neither, because the fortran 90 compiler, in beta-version, is not reliable enough (I. Ihasz).

2. Physics :

- in the framework of the "RETIC" project, E. Bazile has studied the sensitivity of the convection scheme to the boundary conditions.
- Study of the pressure drag created by the Alps, and first tests in ALADIN of the pressure drag parameterization developed at ECMWF, and already adopted to ARPEGE inits operational version (G. Gregoric).
- D. Banciu (Romania) has started her study on the behaviour of physical parameterizations at high resolution.

3. Analysis and assimilation :

- Marta Janiskova (Slovakia) has progressed in her work on a simplifed and differentiable physical package. The parameterisation of convection is still to be done.
- Roger Randriamampianina (Hungary) has started a study of the impact of SATEM on 3D-Var analysis and forecasts.

4. Dynamics :

- Filip Vana (Czech Republic) has started his study about kinetic energy spectrum in a semi-Lagrangian model.
- Typhoon simulation : the mechanism allowing the simulation of a cyclon using in parallel ALADIN (high resolution advantages) and ARPEGE (global large scale influence) is still under development (work by P. Goolaup and F. Randrianavalona : Mastère of the ENM)
- Squall lines simulation : the first simulations show that ALADIN has a good behaviour in such situations (work by M. Camara : Mastère of the ENM)

5. Other topics :

- Duties as TTL (Toulouse Team Leader) of RC-LACE by R. Bubnova, as OTTM (Other Toulouse Team Member) of RC-LACE by G. Radnoti, and as PSO (Project Scientific Officer) of RC-LACE (A. Horanyi)

Annexes :

Figure 1

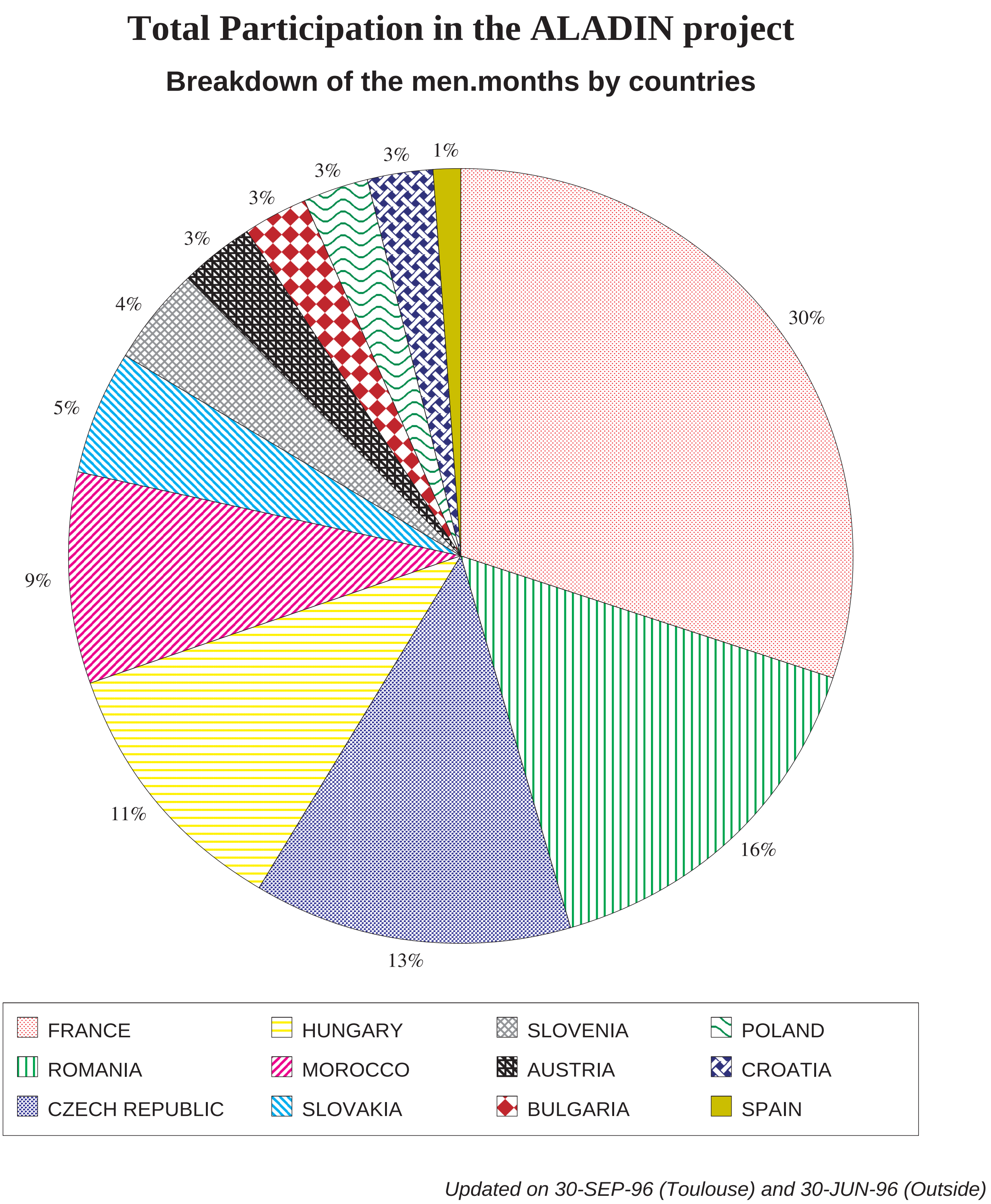
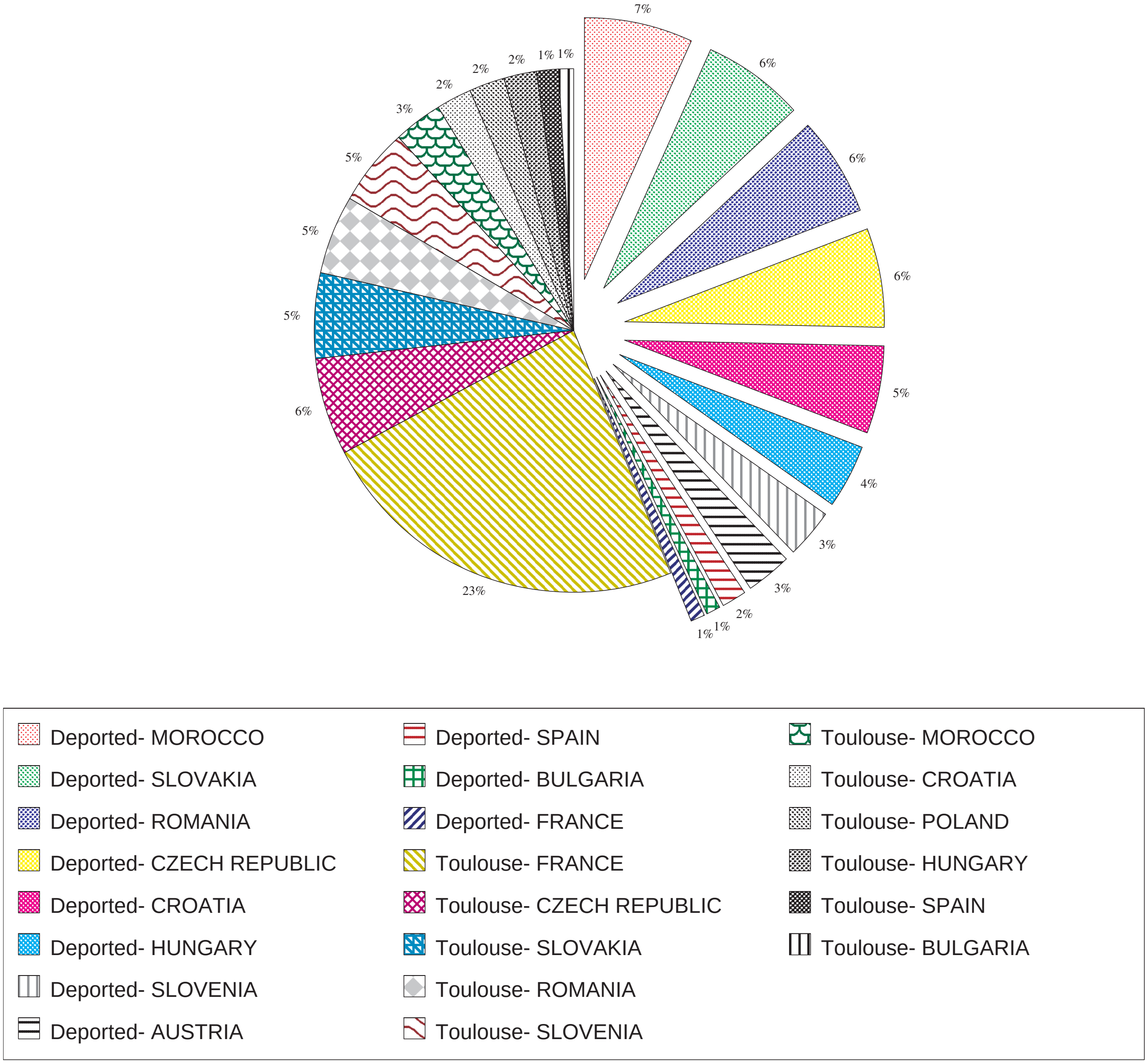


Figure 2

Participation in the ALADIN project since the last quarter of 1995

Breakdown of the men.months by countries (Toulouse/Deported)



Between 30-SEP-95 and 30-JUN-96

Figure 3

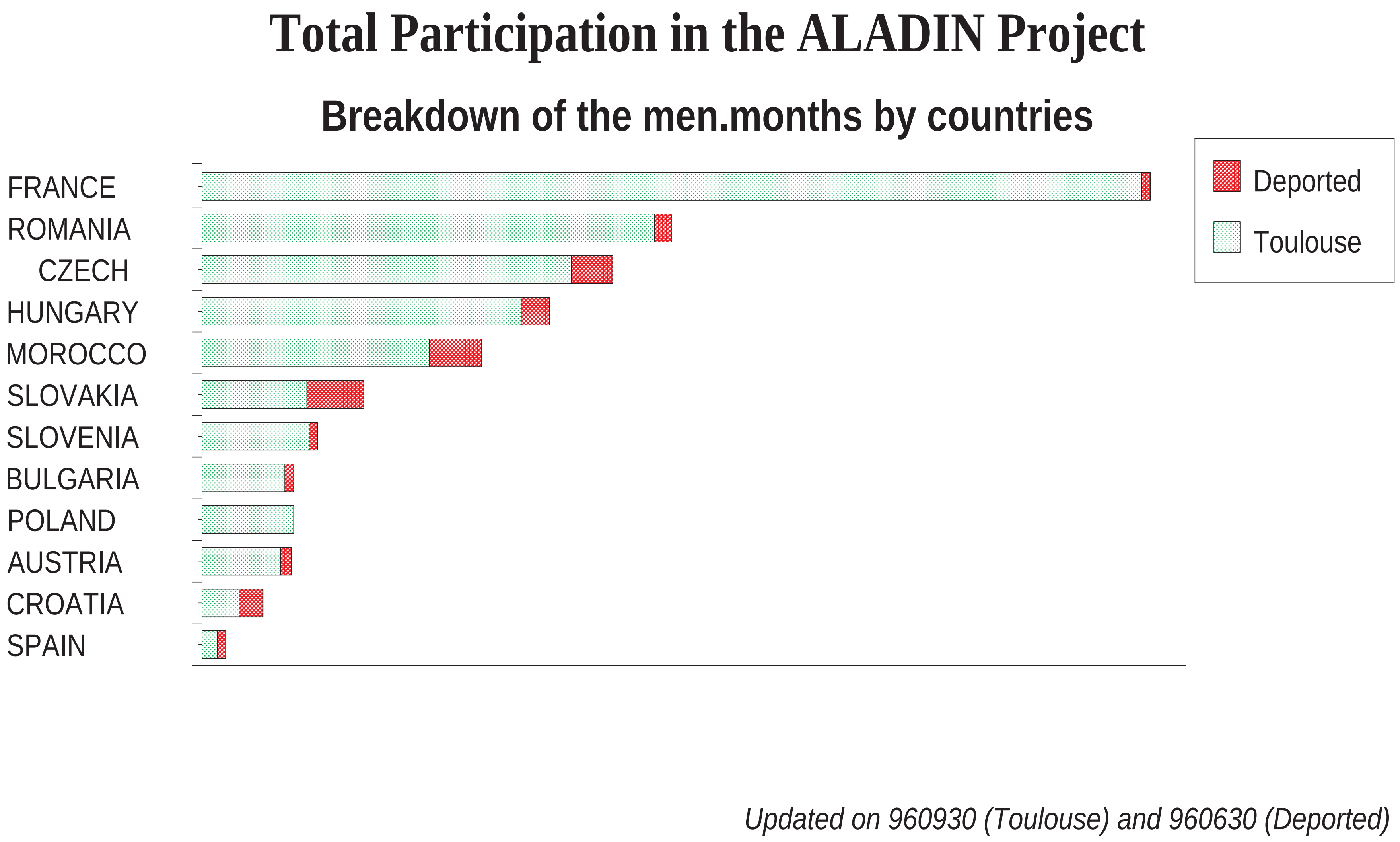
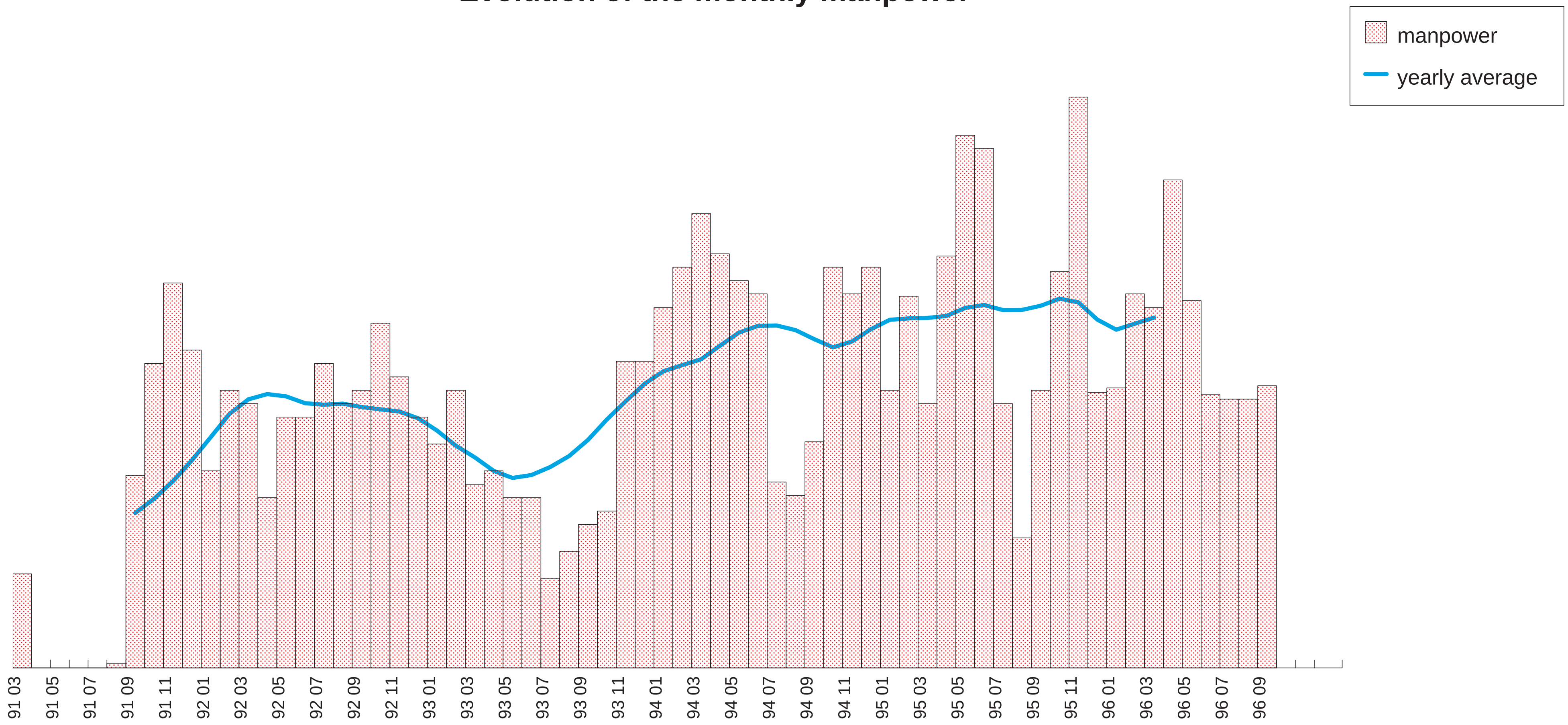

Total Participation in the ALADIN Project
Breakdown of the men.months by countries
FRANCE
ROMANIA
CZECH
HUNGARY
MOROCCO
SLOVAKIA
SLOVENIA
BULGARIA
POLAND
AUSTRIA
CROATIA
SPAIN
Deported
Toulouse
Updated on 960930 (Toulouse) and 960630 (Deported)

Figure 4

Participation in the Toulouse part of the ALADIN project

Evolution of the monthly manpower



Updated on '30-SEP-96'