



Information and Communication Technologies

# EPIWORK

## Developing the Framework for an Epidemic Forecast Infrastructure

<http://www.epiwork.eu>

Project no. 231807

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### **D7.3 Yearly management report**

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## Work package participants

The following partners have taken active part in the work leading to the elaboration of this document, even if they might not have directly contributed writing parts of this document:

- ISI
- FGC-IGC
- TAU
- MPG
- AIBV
- SMI
- FFCUL

## Change log

Version	Date	Amended by	Changes
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## 1 Consortium management tasks and achievement

The members of WP7 have the task to provide administrative and scientific work, including the consortium meeting and the commission evaluation reports. A framework for the communication within the consortium participants as well as the associated partners has been set up from the very beginning in an internal area of the project website. This area is currently being used for the exchange of information between the partners keeping them updated about the work in progress and providing assistance on development of special working groups. In particular, the members of WP7 have made use of all the IT tools available to enhance communication and exchange of information between the Consortium partners. A development wiki has been set up at the address: <http://wiki.epiwork.eu>. As in the previous periods of the project, the wiki home page contains a section dedicated to the Project Consortium, with a brief description for each partner, and a section dedicated to Epiwork's Work Packages. These pages are intended for the members of each WP to exchange documentation, arrange meetings, set up working environments etc. Moreover, there are several mailing lists dedicated to the single Work Packages <http://lists.epiwork.eu/mailman/listinfo> that are actively used by the partners to communicate in an efficient way. The Archives of the discussions are available on the web page of each mailing list (for subscribed users only) so that each member of the Consortium can have a quick overview of the topics discussed over the mailing lists.

For the first three years of the project, the management has prepared a yearly progress report accounting for RTD activities and a summary of the lesson learned in CS as well as the impact and advances with respect to the prediction and predictability of complex systems (see Deliverable 7.7 for the third period yearly report).

During this third period of the project, as well as in the previous years, the chairs and WP leaders have been in close contact at all stages of the project and monitored constantly the detailed progress of the single WPs and the integration process. Especially during this third period, the integration effort among all the different Work Packages has been quite intense and has led to the actual integration of the several ICT platforms developed by the various WPs (see General Scientific Report, D4.3 and D7.7 for more details).

The project board has met for the third period in January 2012, in conjunction with the Mid-term Workshop (see D8.3.2). The annual meeting has been a moment of assessment to review the scientific and organizational matters of the Consortium, as well as an occasion to gather all the participants and in a parallel Workshop with presentations to inform them about the achievements of the individual Work Packages. In this specific period, the integration among the several WPs and the redistribution of some of the resources have been the main subjects of discussion.

## 2 Coordination and conflict management

The Coordinator institution has been capable of responding to the needs of the project through its management structure based on a Project Manager (Mrs. Enza Palazzo), a

Financial Manager (Mr. Roberto Palermo) and a Scientific Manager (Prof. Alessandro Vespignani).

All above mentioned categories dealt with the ordinary management of the project, the coordination of the management efforts, the communication within the consortium, the control of overall project expenses, cost reports collection (mid-term and final project period), check payments and the coordination of operative efforts within the scientific and technical scope.

Both the project and financial management were carried out in compliance with the requirements of the contract.

During the Scientific Board and Steering Committee meeting in January 2012, the Consortium has deliberated that it will be necessary to reallocate part of the Project budget among the WPs and the partners for unforeseen scientific reasons. In particular, the Consortium agreed on the fact that as far as the WP2 is concerned, its contribution to the Project is complete and the funds that remained unused should be reallocated among the other partners. Specifically, it has been decided that an amendment to the deliverables should be made: the WP5 should add some deliverables taking into account the increasing spread in the use of devices such the iPhone which didn't exist when the project was submitted and started. During the third Project Review Meeting, these amendments will be requested together with a six months extension of the project.

Moreover, the WP5 subcontractor ExploSys has not succeeded in advertising the IMS data collection campaign in Germany for the influenza season 2011-12. The platform has been deployed with a delay that couldn't be justified by technical problems.

### **3 Arrange meeting of Management Committee and Project meetings**

During the second project period, the Project Board organized the following management meetings:

- Epiwork Second Period Review Meeting in Brussels, March 15th 2011;
- Epiwork WP5 Third Meeting in Amsterdam, May 26-27 2011;
- Epiwork WP5 Fourth Meeting in London, September 21, 2011;
- Epiwork Annual Meeting in Courmayeur (AO), Italy, January 16-17 2011;
- Steering Committee Meeting in Courmayeur (AO), Italy, January 16-17 2011;

### **EPIWORK SECOND PERIOD REVIEW MEETING – BRUSSELS (BE) March 15th 2010**

The Second Period Review Meeting was organized in Brussels, March 15<sup>th</sup> 2011, with the participation of all EPIWORK Work Package leaders (except WP2 leader Dirk Brockmann and WP6 leader Olof Nyren), the EC Officer and reviewers.

Present: Carlos BOUSOÑO CALZÓ, Jacopo CARRERAS, Mario SILVA, Corrado GIOANNINI, Daniela PAOLOTTI, Ronald SMALLENBURG, Nico STOLLENWERK, Lewis STONE, Marc VAN RANST, Alessandro VESPIGNANI, Julie DUGDALE, Mario da SILVA, Andrew SINGER, Beatriz VIDONDO, Jose-Luis FERNANDEZ-VILLACANAS

***Introduction to the project and the project objectives (Vespignani)***

Overview description of the work performed during the second year, deliverables, success stories, deviations from the planned work.

***Scientific progress report for each Work package and specific deliverables***

**WP1 “Population models and contact networks.”** Presentation. (L. Stone)

- **D1.2** - Practical transmission measures in the presence of reinfection

**WP2 “Spatially structured models and human mobility”** Presentation. (A. Vespignani)

- **D2.2** - Theoretical foundation and mathematical description of network-network systems, i.e. spatially embedded contact networks.

**WP3 “Information platform”** Presentation. (M. J. Gaspar da Silva)

- **D3.3** - Public release of the Epidemic Market Place

***Scientific progress report for each Work package continues***

**WP4 “Epidemic Modelling Platform”** Presentation. (A. Vespignani)

- **D4.2** - Prototype modelling suite of the Epidemic Modelling Platform programmed including contact patterns and population mobility as emerging from WP1 and WP2, with documentation.

**WP5 “ICT monitoring and reporting system”** Presentation. (R. Smallenburg)

- **D5.3** – Test run in 2009
- **D5.4** - Extension of IMS by mobile phones’ data gathering.

**WP6 “Reporting systems comparative analysis and validation”** Presentation. (D. Paolotti)

- **D6.2** - A fully functioning and tested IMS in operation in Sweden
- **D6.3** – The PBA cohort established

**WP7&WP8 “Management / Dissemination, collaboration and exploitation”**

Presentation. (A. Vespignani) (Deliverables **D7.2**, **D7.6**, **D8.3.1** and **D8.7**)

***Presentations of demos and multimedia material not discussed as deliverables***

The summary of the evaluation from the reviewers is the following:

- a) The contribution of the results to Complexity Science has to be made more obvious. One issue is the integration between models and data.

b) The integration of theory, platforms and country data needs to be re-enforced – this is a critical issue for next year. Strong integration within theoretical WPs 1 and 2 and those with data-oriented WPs 3-6 should be taken seriously. Similarly the integration of partners should be more apparent showing how they are working for the project as opposed to working as individual teams.

c) Presentations, progress reports and deliverables should only report on the activities for the current period and only briefly summarize what has happened previously. Presentations should report on the progress of all tasks in the WPs and should also address integration. Deliverables should be made more explicit in the presentations and should be related to WP tasks.

d) Deliverables should always pay tribute in detail to the work done and should not consist of very short summaries. Reference to scientific papers is acceptable in order to provide further details but the main results of the work should be accurately described and reflected in the deliverables. This is important because it is sometimes difficult to see whether or not a paper is fully attributable to EPIWORK and basing deliverables solely on papers may give the wrong impression of what has been done in the scope of the project.

e) Exploitation should be taken seriously and should also address the issue of the sustainability of the tools and the project itself. Next year some plans on the use of results and sustainability are expected.

## **EPIWORK WP5 4th MEETING – AMSTERDAM (NL) 26-27 May 2011**

The meeting was held at Hotel Arena, Gravensandestraat 51, Amsterdam, on 26 to 27 May, 2011.

Present: Iacopo Carreras Daniele Miorandi (CREATE-NET), Markus Schwehm (ExploSYS/AgG), Catarina Júlio Sander van Noort Rui Francisco (FGC-IGC), Daniela Paolotti Corrado Gioannini (ISI), Marc van Ranst (KU Leuven), Ken Eames John Edmunds Sebastian Funk (LSHTM), AnnaSara Carnahan Olof Nyren Mohammad Rasoli (SMI) Breannán Ó Nualláin (UvA), Marian Tjaden Carl Koppeschaar Antwan Wiersma Klaas van Schelven Ronald Smalenburg (AIBV).  
Ronald SMALLENBURG in the chair

A short report on all presentations follows hereafter. The presentations themselves can be found on the Epiwork wiki site: <http://wiki.epiwork.eu/index.php/> (username: epiwork\_user  
passwd: FP7-eu-epi)

The partners decided on the following actions and deadlines:

## 1. Influenzanet IMS planning, 1 June – 1 November 2011 Database and web development

Targets	Tasks	Deadline	Responsible
Fixing bugs and consultancy	- / -	continuous	AI BV, Klaas
Influenzanet.org – corporate website	- comments from all partners to Antwan - all comments being processed - integrating Data Access Form - <a href="http://www.influenzanet.org">www.influenzanet.org</a> online	13 June 18 June 14 June 14 July	All partners AI BV, Antwan AI BV, Antwan
Database - platform functionalities (based on input from Ken, Rui and John, May 2011)  Note: functionalities should be available across major operating systems, browsers and mailers	<ol style="list-style-type: none"> <li>1. <i>GSQ + contact surveys</i> - ability to rapidly correct typos or infelicitous wording</li> <li>2. <i>Add-on surveys</i> - quickly add-on additional and short surveys</li> <li>3. <i>Comments on the GUI for survey creation/editing</i> - to Daniela</li> <li>4. <i>Newsletters</i> - html with name, aut. login and unsubscribe; dispatch: once p/w or by batches</li> <li>5. <i>CMS</i> - improved functionality for editing content of the survey web page; multiple content levels</li> <li>6. <i>Data availability</i> - easy access to data, incl. easily running queries involving several tables</li> <li>7. <i>Presentation of data</i> - (near) real time show of results</li> <li>8. <i>Data analysis scripts</i> - allow rapid comparison of results</li> <li>9. <i>Personalised feedback</i> - diagnosis, history and local information</li> <li>10. <i>Multiple account management</i> - easy-to-use management of multiple accounts, i.e. households</li> <li>11. <i>Forum</i> - as an add-on option</li> <li>12. <i>New maps</i> – integrated in national websites</li> </ol> <p>All functionalities integrated and tested</p>	21 Sept.	ISI, Daniela/Corrado  idem All partners AI BV, Klaas/Antwan idem  idem idem idem idem idem ISI, Daniela/Corrado
Database - plug & play	Adapt current DB platform to new platform with two, main characteristics: - easy to deploy (2 weeks max, excl. translations + new templates) - flexible	28 July	AI BV, Klaas
London meeting	- check new system at technical and modeling level	21 September	Ronald
AgG Austria, AgG Germany – online	- finalisation of templates - integration to the new platform	20 October	AI BV, Antwan AI BV, Klaas
AgG Switzerland, trilingual - online	- finalisation of templates - integration to the new platform	27 October	AI BV, Antwan AI BV, Klaas
Communication to public	- start national communication campaigns via national platforms	1-31 October	-
Facebook survey integration	- integration to the new platform	10 November	AI BV, Klaas
Mobile app	- launch in Italy	October	ISI/CreateNet
Concept Spanish IMS website	- translation of content and development of new IMS - integration to the new platform	October November	AI BV, Ronald/Antwan AI BV, Klaas
Concept French IMS website	- development of new IMS - integration to the new platform	October November	ISI/Inserm, Vittoria AI BV, Klaas

## 2. Communication principles as agreed on at 4<sup>th</sup> WP5 meeting in Amsterdam, 27 May 2011

1. Standard communication by e-mail via EPIWORK WP5 mailing list: [epiwork-wp5@lists.epiwork.eu](mailto:epiwork-wp5@lists.epiwork.eu)
2. All key documents are available at the Epiwork wiki: <http://wiki.epiwork.eu>.
3. Teleconferences, eventually by Skype, are additional. For technical reasons, the participation is limited to 3-5 people.



4. 21 September 2011, at a one-day conference in London we will finalise our preparations for the next season. Each partner is represented by an IT technician and a modeller.
5. Fortnight update *by* all, *to* all, coordinated by Ronald.
6. Contact Acquisto Inter BV/ De Grote Griepmeting:
  - Antwan Wiersma: [webdev@grotegriepmeting.nl](mailto:webdev@grotegriepmeting.nl), Mob.: +31 6 81 48 60 48
  - Klaas van Schelven: [dbmgt@grotegriepmeting.nl](mailto:dbmgt@grotegriepmeting.nl), Mob.: +31 6 81 15 99 10
  - Ronald Smalenburg: [directie@grotegriepmeting.nl](mailto:directie@grotegriepmeting.nl), Mob.: +31 6 51 41 52 68

### ***3. Discussions and presentations***

A short report on all discussions and presentations follows hereafter. The presentations themselves can be found on the Epiwork wiki site: <http://wiki.epiwork.eu/index.php/>

### ***4. Evaluation season 2010 Epiwork platform –Ronald Smalenburg, Breannán Ó Nualláin***

In a frank and open discussion all participants expressed a general feeling that communication and cooperation should have been better. Misconceptions about the national expertise to understand and use the functionalities of the survey caused problems implementing the new platform in the UK, Portugal and Sweden. It turned out to be too complicated and wasn't tested properly before going online. Access to data stored locally and at the central database at the UvA server was difficult in practice. Discussion about the level of IT expertise that is necessary locally. The system needs to be easily deployable as well as flexible, in order to implement it quickly in other countries and to add additional functionalities, surveys or just simple extra questions without much effort. The flu survey has great potential, but only if the platform supports that. It is agreed that the new platform should be ready, tested and fully functioning by September. The communication to the general public should start in October. There will be a one day conference in London on 21 September, to make sure the system is ready for the new flu season at both technical and modelling level.

### ***5. IMS platform: new features and functionalities***

#### ***(I) Presentation Daniela Paolotti***

The IMS platform has to balance user friendliness with flexibility. To enhance flexibility Daniela contracted an IT expert to create extra options. The IT expert is under direct contract until October, but will be available for technical support also later on. The administrators of the platform will be able to use the interface locally. The new software is written in the query language from the original platform. The editing option lowers the barrier to make local changes; therefore coordination is necessary to make sure the core of the golden standard questionnaire is upheld.

#### ***New features***

- Edit option to change the appearance and format of a question by adding rules between options or adding choices.
- Possibility to get a preview and make a survey beforehand, to be used when something happens, like a local flu outbreak or a flu scare.

- Possibility to display real time local information for local administrators.
- Consider linking social networks to the platform.

### ***(II) Presentation Markus Schwehm***

The aim is to create an attractive visualization of flu trends for the general public based on zip codes. People want to be able to see themselves on the map. They want to zoom in on their own block, but they also want to know if the school of their children in another area has more or less flu. The image has to be beautiful but also accurate.

#### *Approaches*

- Google Maps offers the possibility to summarise markers, polygons and colour. But the build up of the map gets very slow because Germany has 8000 zip code regions.
- Another possibility is to use Google Earth's KML and KMZ files. They are huge files but it's unclear if the data can be trusted.
- Solution might be using zip code centres via [www.geopostcodes.com](http://www.geopostcodes.com) or [www.geonames.org](http://www.geonames.org). Zip data can be translated to Voronoi datagrams with an algorithm based on the central postal code. This approach has problems with outliers and misplaced colours that have to be corrected manually.

#### *Rendering*

- Rendering in your own webserver causes a huge delay before the map appears
- Rendering in the client browser is faster. This involves sending all the data to the client using Google KML maps.
- The fastest approach is rendering the map on your own server and put the image on your website. Google can then download it and put it on a map. The problem is that if you zoom in, the pixels are too big.
- A better way might be not to use rendered polygons but tiles overlaid over Google maps.

These approaches have not yet been tried with real data and it's not yet production ready code. Visualising single people could become an ethical problem if there are only one or two users in one region. Maybe a solution is to still use the data, but merge it with a bigger region. Markus doesn't have the budget but wants to proceed. It is decided that Daniela will take it over, and will use real data to see what happens. Sander will provide the data he has stored for every country for every season. Apart from the ethical issues, technically it is decided to follow Markus proposal and continue this model.

### ***6. Influenzanet.org: functionalities and content of new website - Antwan Wiersma, Sander van Noort***

The new influenza website [www.influenzanet.eu](http://www.influenzanet.eu) is a new base template for all new partner websites. This is an additional European website, not meant for the general public but as a digital showroom of all the activities on a European level, mainly for interested laymen, researchers and policymakers.

#### *Features:*

- Accessible for search engines and all browsers
- More flexible than existing site.
- Site hosted on server in Amsterdam.
- The incident graphs are now based on people that at least 3 times answered the questionnaire, different definitions are possible.
- The basic graphs are always the same, changes in newsgroup.

Ronald is responsible for updating the news. The scientific committee will decide on the scientific content. Sander is responsible for coordinating the epidemiological issues. Choices still have to be made on:

- Organisation
- Epidemiological discussion: definitions
- General lay out

It is decided that every participant will send his or her comments on these issues within 2 weeks via email to Antwan and Ronald.

## *7. Influenzanet: scientific results and potential for the future*

### *(I) John Edmunds and Ken Eames*

The advantage of an IMS is clear: it makes it possible to reach people that don't access care. It's quicker than GP information, which is important in case of a pandemic. Also the symptom based diagnosis instead of a GP diagnosis is much more valuable. The symptoms are important epidemiological parameters.

#### *Scientific goals*

- Access to care can readjust GP figures flu incidence
- Comparing severity of different strains
- Comparing vaccine effectiveness
- Research flu spreading within households

Other important aspects of the Influenzanet systems include: its speed, the European-wide scope, symptom-based data that can be used beyond ILI, spatiotemporal trends, indication of severity of disease, information on several risk factors (e.g., COPD, asthma), and the possibility to quickly add additional survey questions for participants or visitors in general. The group discussed whether the Influenzanet systems can provide a valid estimate of the incidence of influenza-like illness in the community.

### *(II) Marc van Ranst*

To detect whether people are infected by real flu or other respiratory viruses Marc plans to start a self sampling procedure using nasal swabs for approximately 150-200 people. Traditionally this is done with a cotton tip, but this method is not very suitable for DIY. A better device to use is metal tucker with a stop, which will get the most epithelial cells from the mucosa in the nostril.

#### *Two goals*

- At the start of the epidemic, to detect the first cases. Logistically difficult because it has to be fast. But earlier results from Belgium and the Netherlands suggests this way it is possible to detect the first flu spike faster than GPs.

- Sample people with different sets of symptoms, to distinguish between influenza and other respiratory viruses. That way we can work out which symptoms are the best diagnostic.

The group agrees that evidence of how well the Influenzanet systems track actual influenza (through lab test corroboration) is needed.

#### *Selecting subgroups for swaps*

The diagnosis of flu is either based on symptoms or on viral confirmation by GPs. Sander remarks that by cross referencing these sets it might be possible to identify a set of symptoms that points to flu. Then only people that have the right set of symptoms will receive a swab kit, to prevent the experiment becoming too big and expensive. Another suggestion is to question people when they register whether they are willing to participate in a DIY test later on. Preferably whole households.

#### *Ethics*

Olof warns that new questions might mean you need new approval from ethic commissions. A solution could be to make mock up questions on issues we might want to do in the future, and get them pre-approved by the national ethic commissions.

#### *Vaccine effectiveness*

Vaccine effectiveness is a hot issue according to Marc. It is difficult to measure, because double blind experiments are not deemed ethical anymore. Marc expects the ECDC will be interested in our data, also to prolong this project into the future. John notes that a comparison of the efficacy and severity of the virus all over Europe would be of great scientific value and would certainly generate a lot of attention.

#### *ILI and non-ILI definition*

Every country should use the same ILI definition. The choice would be between the ECDC definition or the definition first used in Marc's publications. It is decided to use the ECDC definition for ILI since that definition is the same in all European countries. Ken remarks that the definition 'non-ILI' is unsatisfactory feedback for people. Non-ILI generally means it's either an allergy or another respiratory infection and it's very difficult to distinguish between those two, but the public would like to get more concrete feedback. A suggestion is to couple the data with the national pollen count. It turns out that not all countries give the same sort of feedback. Italy only states ILI and non-ILI. Sweden doesn't give any feedback at all because they don't have individual points for each person.

### ***8. IMS platform management: procedures, communication and targets - Klaas van Schelven and Antwan Wiersma***

*Antwan* is responsible for the front end. He will make a universal visual presentation for the new platform, using a new CMS. *Klaas* is Django/Python language expert. He is responsible for the back end, e.g. the safety of data storage, plug and play problems, etc. The new site [www.influenzanet.org](http://www.influenzanet.org) will be the first website to test the new CMS. The Dutch GGM site is going to be the first partner site. *Antwan* and *Klaas* are available for consulting and advice on general support, how to fix bugs and other

problems and they will react to questions within 24 hours and promise to try and solve issues within a week.

*Procedures:*

- All current sites will switch to the new design before the flu season
- It will be released as open source.
- 3 deployment models:
  - Central hosting in Amsterdam, although some countries might not allow hosting in another country (Markus will check legal issues surrounding privacy data storage in Germany with hosting abroad).
  - Hosting in Amsterdam and also storing all data in Amsterdam..
  - Supported deploy. This means central hosting in Amsterdam, but also software and personal survey data locally stored in a database.

*Main improvements new CMS:*

- Possibility to edit pages and news items in multi languages.
- Option of having workflow published or unpublished
- Inline editing should be possible
- A submenu with tabs is already on preview at [www.influenzanet.org](http://www.influenzanet.org)
- Localised graphing tools integrated in the new CMS

It is decided that all participants will send a functionalities wish list to Antwan and Klaas within two weeks.

*Communication (see also page 2):*

- Ronald will call and ask the national teams for news and then will give a 2 week update.
- Abandon the redmine repository; use the Epiwork wiki mailing list.
- New meeting on 21 September at the LSHTM in London to finalise preparations for the new season. Only for technicians and modellers.
- Ronald would like to receive cc from all emails, not to control, but to guard the process.
- It is decided that communication should take place predominantly via email
- The [epiwork.wiki](http://epiwork.wiki) is the online place to collect all documents.

### ***9. Mobile extension IMS platform - Iacopo Carreras***

Iacopo has been working on a Java application for Blackberry. This mobile app will be put online in a few weeks and launched in October. The screen has different background possibilities so users can customise their environment. Participants from other countries can use it and change it in their own language. Locating people via GPS is possible in theory, but you would need Bluetooth and GPS logging. Currently there are no plans for iPhone and android platforms at this moment.

### ***10. Legal issues - Daniela Paolotti***

Daniela presents the draft of legal terms of participation for the [influenzanet](http://influenzanet.org) project based on European and Italian laws. Daniela will circulate the document as soon as it finished on the wiki. Of course each country has to check with local restrictions.

*Comments:*

- Ethical boards don't like form agreements with a disclaimer on the part of scientist. Suggestion to run this for local ethical boards.
- People might be more reluctant to join if they have to push a special agree button.
- If it looks like an incomprehensible legal document it might scare people that they sign something they don't understand. Make it friendlier.
- It is Epiwork that is obliged to treat the data carefully. The users themselves don't have any obligation, but asking them to agree sounds like they do.

It is decided to choose different wording to make clear what Epiwork will do with the information.

**11. Influenzanet – Carl Koppeschaar***Infection pattern within household*

Young children are the most important to monitor the onset of the flu season because they lack immunity and therefore are the first group to get infected. The second group is their older siblings, then parents and older people. The normal flu spreads over Europe rather slowly because it first hits nursery schools, followed by primary schools, then parents, of which generally the father is also a commuter. They spread the flu to other cities.

*Flu conveyor belt hypothesis*

Analysis from beta.influenzanet.com and literature shows that the influenza virus is more stable at lower temperatures and under humid conditions. That means that the monsoon period in the tropics should be a good flu environment, but data on tropical flu remain scarce. Carl discusses the hypothesis of a flu conveyor belt to explain the spreading of flu. Future focus should also be on non-European countries.

*Comments*

- John argues that other driving factors might be people change the way they interact, for instance using more public transport when it rains. That's why we need more information about behaviour and contact patterns.
- Olof remarks that Sweden has twenty weather stations that measure and store variables like temperature, humidity, air pressure and wind speed. They plan to combine these data with the flu survey data to see if it is the weather itself, or changes in contact pattern.
- Sander states that future Epiwork should also focus on the symptoms questionnaire because they hold unique data that allow noticing changes by following various symptoms.
- Portugal also have a low participation of children, one new initiative is the development of a game for children in primary schools. With extra budget this could be translated to English. The Dutch also have flu games for school children. These should be shared.
- In Sweden the participation rate amongst children in the parallel population-based reporting system "Sjukrapport" is higher and quality reports are better, because they specifically approach the parents.

- In the Netherlands games for educational practice and primary schools are successful and get downloaded often. The games are for children between 6-18 years old. Children under 6 are difficult to reach.
- Marc suggests appealing to parents to report their young children in, because otherwise the parents will spread flu later on.

## *12. Influenzanet.org: its future after Epiwork – Ronald Smalenburg*

The purpose of this introduction was to discuss how we can sustain the entire infrastructure that is Influenzanet after 2013.

### *Key issues*

- Innovation: Communication new ideas like school children video's for instance
- National Financing
  - Funds for national initiatives.
  - Banners, advertisements, sponsorships. Depending on legal restraints with banners on health websites etc.
- International financing
  - EU framework
  - Pharma
  - Other industries
  - Contract research/data mining.

### *Comments*

- Regarding funding John remarks that ECDC took over the EISN network already. We ought to meet with them. Community surveillance is very much on the agenda.
- Sander gave a presentation for ECDC: they are aware and interested, but how to contact them for money?
- Ronald explains that for the central part, excluding national websites, € 500k is needed every year. For local platforms that are already up and running about € 50.000 for one person a year.
- John underlines the importance of demonstrating added value for our system by producing more scientific publications. By improving scientific visibility we will get interest from parties like the Wellcome Trust or ECDC on a scientific basis.

## *13. Results and decisions*

### *Instalment of science committee*

- The science committee will consist of John, Olof, Sander, Daniela and Marc.
- General objective is to uphold scientific excellence.
- The scientific committee will decide on the scientific content of Influenzanet.
- The committee will decide on requests to use data for research. They will provide a simple application form that can be downloaded. Requests should be feasible and possible and there should be certain prerequisites for handling the data. Olof will provide an example application form from an earlier project.

- The science committee will check proposals from participants for extra questions or new surveys for other diseases.

*Decisions*

- 1 November is key deadline because of the start of the new season
- 21 September a (one day) meeting in London to check preparation, plug and play tested version
- New data base management with Antwan and Klaas
- Furthermore: see diagram on page 1 with action points and deadlines
- Nr. 2: decisions on communication
- All apply ILI definition by ECDC

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## **EPIWORK WP5 5th MEETING – LONDON (UK) September 21 2011**

The meeting was held at London School of Hygiene and Tropical Medicine, London.

Present: Iacopo Carreras (CREATE-NET), Markus Schwehm (ExploSYS/AgG), Catarina Júlio Sander van Noort Rui Francisco (FGC-IGC), Daniela Paolotti Corrado Gioannini (ISI), Ken Eames John Edmunds Sebastian Funk (LSHTM), AnnaSara Carnahan Mohammad Rasoli (SMI), Antwan Wiersma Klaas van Schelven Ronald Smallenburg (AIBV), Vittoria Colizza Clement Turbelin Marion Debin (INSERM)

*Account of activities and results since end of May*

per country: by country coordinators

on DB/platform/WP5 coordinators level: Ronald Smallenburg

*Platform security and privacy protection*

Klaas van Schelven

*Science: new articles, upcoming projects, etc.*

all

*Publicity campaign, exchange of ideas*

all

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## **EPIWORK 3<sup>rd</sup> PROJECT MEETING – Courmayeur (IT) 16-17 Jan. 2011**

This third project meeting has been not only the usual check point of the activities of the project within the consortium but also, more importantly, as a moment to finalize the integration effort and joint research among the partners and among the Work Packages, in preparation for the last year of the Project. The meeting has allowed, as the previous years, all partners to provide a summary of the activities undertaken and the progress of the research activities. As the previous years, there were all the formal moments of the consortium with the Steering committee meeting. Emphasis has been given to the effort of the Consortium to meet the previous year feedback concerning integration, collaborations and exploitation of the results.



The meeting was held at the Grand Hotel Courmaison, Pré Saint Didier (AO), Italy, on 16 to 17 January, 2012.

Present: Jacob AXELSEN, Annasara CARNAHAN, Iacopo CARRERAS, Vittoria COLIZZA, Francisco COUTO, Mario DA SILVA, Dulce DOMINGOS, John EDMUNDS, Sebastian FUNK, Corrado GIOANNINI, Gabriela GOMES, Lieselot HOUSPIE, Amit HUPPERT, Carl KOPPERSHAAR, Piet MAES, Stefano MERLER, Daniele MIORANDI, Olof NYREN, Daniela PAOLOTTI, Ronald SMALLENBURG, Lewi STONE, Wouter VAN DEN BROECK, Marc VAN RANST, Alessandro VESPIGNANI, Antwan WIERSMA, Rami YAARI, Joao ZAMITE

Absent with apologies: Shlomo Havlin, Dirk Brockmann

### *Monday, January 16th*

#### *Focus meeting on WP5 for scientific and technical issues (WP5 partners)*

Discussion of scientific and technical issues: AIBV, ISI, LSHTM, SMI, IGC + subcontractors

#### *Opening of the 3<sup>rd</sup> Epiwork Project Meeting (all partners)*

Review of the agenda, next deadlines, incumbencies and administrative issues (moderator A. Vespignani).

Alex Vespignani underlined Dirk Brockman's absence, anticipating that some decisions shall be made about WP2.

The other issues to be discussed and assessed were the following:

1. The Status of the art
2. Integration challenges
3. Deliverable progress
4. Funds tuning
5. Preparation of Brussels review meeting
6. What after the end of the project?

AV stated that the Project has had very good outcome and excellent evaluation by EU, but needs more integration; the EC expects the merging of surveillance infrastructure with the Data collection and Computational infrastructure. Daniele Miorandi asked how common publications across different WPs are considered, AV replied that they're important but common outcomes among the several WPs are necessary.

As far as the deliverables are concerned, AV states that there are no particular problems since the various platforms were released in advance.

Funds tuning: decisions about reallocating WP2 funds shall be taken during the last part of the Project meeting.

Project follow up: ensuring that all the Work done within the project doesn't go lost is a priority, one possible resource is Flagship program for ICT by FET; main idea is to create an infrastructure that replicates Epiwork's in other areas and to build a global health observatory: also working on other diseases and not just on human beings is a possible goal. AV already presented a pre-proposal that, given the Flagship timing, might turn into an "Epiwork continuation".

***Scientific progress report from WP5 and WP5 administrative and scientific Issues***  
(include also dissemination and outreach activities).

-Ronald Smallenburg

***Scientific progress report from WP6***

(include also dissemination and outreach activities)

- Olof Nyren

***Scientific progress report from WP1***

(include also dissemination and outreach activities)

- Lewi Stone gave a brief overview of the state of the work package and introduced one of his collaborators, Jacob Bock Axelsen, who discussed recent work on modeling and parameter fitting. This work is based on ILI data from an Israeli health insurance company, and uses a SIRS model with six parameters, including seasonality and antigenic drift. The latter deals with loss of immunity, which is expected to play a role in datasets that span many years. Various issues were briefly mentioned, including the fact that the role of seasonality is not well understood, that local behavioral specifics need to be smoothed out, etc. The discussion focussed on results involving a fitting over the 2000-2006 period, the results of which were then used for an exploration for the 2006-2010 period. An 'unexpectedly good' extrapolation for all flu –ignoring different types of flu– was shown. What followed was a lively discussion on potential interpretations, causes, relevance and impact. Further results and considerations were briefly discussed, followed by a wrap-up and a contextualization of this work with respect to the concerned work-package and the overall project.

***Scientific progress report from WP2***

(include also dissemination and outreach activities)

- Alessandro Vespignani

***Tuesday. January 17<sup>th</sup>***

***Scientific progress report from WP3 + Demo of the Epidemic Marketplace***

(include also dissemination and outreach activities)

Mario da Silva presented the new version of the Epidemic Marketplace and announced that within February the integration with the Gleamviz platform will be complete. AV suggested that an effort within the consortium to upload data on the Marketplace platform has to be present. The Mid Term Workshop taking place wright after the Project Meeting, will be useful to convince others to do the same and avoid leaving the platform empty. Mario da Silva suggests to use the platform to spread and disseminate scientific outputs as well. Olof Nyren raised the issue of the handling of personal data.

***Scientific progress report from WP4 + Demo of the Simulator***

(include also dissemination and outreach activities)

Alessandro Vespignani introduces Gleamviz, the WP4 Computational Platform and he underlines how Gleamviz has been released ahead of schedule. Gleamviz is a sophisticated simulator of disease spreading on a global scale, in which scientists can play with several parameters regarding the disease, can visualize the results of the simulations on World-scale maps etc. The platform is touchpad friendly. It can show the invasion tree of the epidemics that can be tuned with different colours, thickness, etc

In the public version not all functionalities are present and not all data accessible. The WP4 team has also developed the EPIDEMIC PLANET, touch panel simulator that can be used at conferences, etc for public, pedagogical use. The WP4 platform can also be used for visualizing any other data.

As promised to John E., AV presents model in Africa. The problem is that no data are available. JE proposes to use it for animals (cattles, etc). The problem is farmers as they don't want anyone to track cows. Vittoria Colizza is working on it.

*Integration between the platforms of WP2, WP3, WP4 And Discussion on the following points:*

Integration effort of the project results: ISI, MPG, FFCUL

- EC project review meeting.
- WP intra-collaborations and integrative assessment
- Preparation the 3<sup>rd</sup> year report (scientific, dissemination/outreach)

Alessandro Vespignani introduced the discussion with the following remarks on the several WPs:

WP1: A project meeting is not a conference, contributions should not be talks; careful and change before review meeting. Papers and results are good, but need to integrate more with other WP.

WP2: their contribution to the project is quite complete. Will use their funds for other things. Shall find an exit strategy.

WP3-WP4: good integration, good job. Still lack of integration with the WP5 monitoring. Delivered more than promised and expected.

WP5: issues with the number of users. Platform must be launched within 3 weeks or formal steps shall be taken. Concerned about how to improve and present poor result; use of social networks (FB) might be an idea. Need to create a virtual circle i.e. Press releases --- new users -- more press attention – more new users etc. Can prizes promised to users be paid using EU funds?

**CORRECTIVE ACTIONS**

a meeting is needed between data collectors- modelers-computational in order to coordinate and integrate more. Use IMS data.

Preparation of review meeting: wish is to have every team leader present. WP leaders must be there, in case they cannot, they must nominate a substitute and instruct him/her. Presenting material for review meeting must be done with largest advance as possible The presentation must be strictly related to the project objective, as EU officers are very strict on that. Deliverables cannot be the paper.

PRESS: Vittoria Colizza reports about links of Inluweb on Repubblica , Gabriela Gomes about a TV interview. Need to increase press releases, media information, drop some charts on the site even if not scientifically perfect (for users fun and interest). Gabriela Gomes suggests a promotional video for advertising, which should be possible to cover with project funds. More aggressive on media

John Edmunds wonders how to improve visibility on Google (1<sup>st</sup> page instead of 3/4)

Carl Koppershaar (WP5) presents an old fashioned Dutch site called ABC Reken mee met that counts 123.000 people. No flu at the moment in Europe, therefore no graphs, no updated statistics, no charts. People ask for them.

AV thanks everybody for being here and stresses that the project is very well seen in the EU and is considered successful.

### **EPIWORK STREERING COMMITTEE – Courmayeur (IT) 16-17 Jan. 2011**

WP leaders report a consolidation summary with a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis as emerged from the previous discussions. To do list and planning for the WP.

**BUDGET:** Olof Nyren: WP6 is running out of budget while the KU Leuven team has not yet used but a small part of their resources. Marc Van Ranst assures that his team will use the remaining budget. Remaining budget is 10 times what he spent, still he's sure he's going to spend.

The Consortium is planning to reallocate the remaining funds of WP2. Create-net propose to develop applications for mobile devices for the WP5 IMS. Ronald Smallenburg proposes to use part of this budget to translate the IMS platform . AV proposes to ask for an amendment to deliverables. The Project needs to have some additional deliverables due to increasing devices like Iphone etc that weren't there when the project was submitted and started. Some funds from MPG will be given to FBK and SMI. AV knows some productions that may do the video and that work for majors. This would be a subcontracting

JE plans to spend all their money and suggests hiring someone specifically for integration. Annasara Carnahan proposes that instead of hiring someone for integration, better talk and cooperate between WPs.

All the WP leaders agree that the inter-WP communication has to be enhanced. WP leaders unanimously decide to ask for an extention of 6 months, to ask for MPG money reallocated and to allocate small amounts of money for new deliverables to be discussed.

### **MID-TERM WORKSHOP – Courmayeur (AO), 18-20 January 2012**

The Consortium moved one the planned workshop (Deliverable 8.3) from the month 24 to the month 36 motivated by outreach and dissemination considerations. This has resulted in quite a big event with a huge impact on public health environment with great benefit for the project. This deviation was approved by the E.C. with the Amendment to the Grant Agreement n.2 dated January 11<sup>th</sup>, 2011. The original Deliverable 8.3 was split into Deliverables 8.3.1: Organization of the Mid-term Workshop (month 24) and 8.3.2: Mid-term Workshop (month 36). Details of the organization and outcome of the Workshop can be found in the **Deliverable 8.3.2**.