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# AETIONOMY – CONSORTIUM MONTHLY UPDATE



Inspired by patients.  
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# Message from the Coordinators

Dear AETIONOMY partners,

It's hard not to refer to the passage of time in these bulletins as we close on the end of the project, but in these 5 short years there has been significant time and effort spent on bringing us to this point – and we think this is worth reflecting on – we have gone a long way.

The data generation from all partners contributing to WP5 has been phenomenal and I think you will all recognize the successful generation of significant data in all facets of the project. Naturally from a WP2 perspective, this influx has been keeping the team busy with the curation and integration of these data into what is shaping up to be a world leading platform.

Also, downstream of these steps, the analytical teams from WP3 and WP5 are beavering away to explore these data and generate inferences and interpretations ahead of two rapidly approaching significant dates – the final symposium and the final report (two things certainly occupying the minds of the PO at the moment).

As the final report looms large, we remind you all of the number of open deliverables and the critical importance of the successful completion of these ahead of our ultimate deadline.

We are looking forward to celebrating the end of the project with those of you attending the GA and Final Symposium meetings at the end of November and remind you to register if you are planning on attending.

Thanks

Your PO (Phil, Martin, Jaqueline, Stephan and Tobias)

# General Information

## Important Dates

- Final General Assembly Meeting, Bonn, 28 Nov 2018
- Final Symposium & IMI Initiatives, Bonn, 29-30 Nov 2018
- LEAB Meeting, Vienna, 11 December 2018
- Project ends officially, 31 December 2018
- Final report due to IMI, 28 February 2019



Reminder that all publications need to be submitted to the Project Office **before** submission, same for Congress abstracts, etc.! **Open Access** is encouraged for all publications.

Please review the Project Agreement for more details. Remember to follow the **IMI mandatory communication guidelines** with regards to funding statements and logos.

Did you know that **AETIONOMY** should always be written in capital letters?

## Deliverables late to IMI: DoW v6.2 May28 2018

- D2.4.3.3. (SCAI/UL ) due M55 – planned Nov 2018
- D5.3.2.4-7-9 ... WP5 ... due M55 July
- D5.4.3.1 – due September

## WP1 – Governance & Coordination

- Apart from the IMI 10th anniversary scientific symposium held this month, AETIONOMY work was also promoted at the Annual Summit of the Human Brain Project in Maastricht last week.
- Martin is coordinating a special focused topic issue of FRONTIERS in BIG DATA, which will exclusively deal with Virtual Cohorts. That will be a massive boost to our VDC activities.
- There are **16 deliverables due to the end of the year which is in 8 weeks!** At present, we have 4 deliverables outstanding that were due in June and July. The PO would like to ask all WPs please to try to submit the deliverables this week to the PO for approval.
- The **AETIONOMY Final Symposium** will take place on **29<sup>th</sup> and 30<sup>th</sup> November 2018** in Bonn, Hotel Hilton. Please remember to register online. It is free but registration is mandatory and spaces are limited. The **Final General Assembly** will be held on the Wednesday evening **28<sup>th</sup> November** from 17h to 20h followed by a farewell dinner. Please confirm attendance with the Project Office. **We expect at least one person per partner to attend the GA.**

## WP2 – Knowledge & Data Management

- WP2 continues to work on inclusion of the datasets. We have 5 new datasets available. Please refer to the table for an update. Currently clinical and neuropsychological assessment, environmental, and medical history are available for these studies.  
The Inflammatory (UKB, IDIBAPs), Proteomics and Methylation analysis will be added to the studies in the next week.  
If you have not yet requested access and would like to gain access to the datasets please open a ticket via our ticketing system (<https://aetionomy.uni.lu/StudyRequest/>)
- The deliverable D2.1.3.3 Production of new mapping files will summarize the addition of new datasets and is under preparation.
- WP2 is also organising a webinar to introduce the new AETIONOMY Knowledge base (AKB) interface and data repository completing deliverable D2.4.3.3. Please mark your calendars for the **AKB Webinar** on **16th November** at 15:30h.



## WP2 – Knowledge & Data Management

Dataset Loaded	Number of subjects	Study Group
AETIONOMY AD	8	Control 2 At risk AD 4 Prodromal AD 2
AETIONOMY PD	405	Control 90 At risk PD 39 Familial PD 25 iPD 251
ICEBERG	93	Control 18 iPD 62 (including 2 visits) iRBD 13 (including 2 visits)
UKB AD Inflammation 2	220	Non demented control 40 AD 103 MCI 77
IDIBAPS AD CSF	137	AD 68 Control 25 MCI 44
Updated with AETIONOMY ID	Number of subjects	
DIGPD	409	
D13B Tuebingen	232	
King's College London	93	

**IMPORTANT!** Please submit all further inclusion of datasets before the 1st of November for incorporation to the AETIONOMY Knowledge Base on time!

## WP3 – Knowledge Integration & Mining

- A variety of modeling and mining approaches are being pursued by WP3. Some of the approaches have been described in the last bulletin; in the meanwhile, some additional strategies are being explored (e.g. based on neural networks).
- Effort was invested into improving the interoperability between mechanism-representations and conventional pathway databases. Two publications are under way that address a platform that makes major pathway databases and NeuroMMSig interoperable; these platforms will allow users to choose the source of mechanism-information from a wide spectrum of pathway- and mechanism-inventories.
- Clustering experiments are still being run; with mixed outcome. Limitations of these approaches are not necessarily due to a poor performance of the clustering technology, but rather on the limited information content in the data. Genetic variation, for instance, does not explain complex clinical phenotypes and progression patterns.
- As time is running short for WP3, we already plan for additional mining efforts beyond the end of the funded period of AETIONOMY.

## WP4 – Ethical & Legal Governance

- In WP4, LUH is continuing to examine the legal framework for maintaining the AETIONOMY Knowledge Base after the conclusion of the Project, including in terms of new requirements under the General Data Protection Regulation.
- LUH will hold the final Project **Legal and Ethics Advisory Board meeting**, organised with the University of Vienna on **11<sup>th</sup> December** in Vienna. Besides the attendance of expert members, WP4 co-leader, Alzheimer Europe, will also participate, offering an important patient perspective. A focus of discussion will be on ethical considerations in relation to the post-project data retention in the AKB, as well as issues arising from proposed partner bio-sample retention.

## WP5 – Clinical Validation: AETIONOMY sample analysis update

- The WP5 generation of biomarkers is close to finishing: ICM has completed the MRI transfer to BBRC and data on brain imaging will be delivered by mid-November. The same timeline is expected regarding IRS analysis, for which SARD has received all the pending samples at the beginning of the month. These last datasets will then complete the WP5 panel of generated data, which will all be available before the final General Assembly planned on the 28 November.
- After stabilization of the stratification model with the DIGPD cohort at the ICM, we have successfully replicated it into the AETIONOMY cohort. Next step for Stratification of Patients is to evaluate the correlation with the biomarkers generated by all the partners.
- Overall analysis of the generated data will continue in the next months and several publications are already in preparation to be submitted by the end of the project: Neuroinflammation panel including YKL40 assessments (UKB); Proteomics analysis (KI); multi-biomarker analysis paper (IDIBAPS); publication on Stratification analysis methodology (ICM).
- UCB and ICM are working on a publication presenting the AETIONOMY cohort with a statistical description of the cohort.

*Table: Status of AETIONOMY WP5 analyses*

	N Biospecimen	N processed (to date)	Available results
<b>Genome wide genotyping (ICM)</b> <sup>DS.3.2.2</sup>	~ 1500 DNA	100%	July 2018 completed!
<b>Methylome of SNCA gene (UKB, UW)</b> <sup>DS.3.2.3</sup>	~ 1000 DNA	100%	June 2018 completed!
<b>Cholesterol panel analysis (UKB, UW)</b> <sup>DS.3.2.4</sup>	~ 350 Plasma	100%	October 2018 completed!
<b>Neuroinflammatory markers generation in CSF (UKB, MH)</b> <sup>DS.3.2.5</sup>	~ 240 CSF	100%	June 2018 completed!
<b>YKL40 and AD markers (IDIBAPS)</b> <sup>DS.3.2.6</sup>	~ 500 CSF	100%	July 2018 completed!
<b>Brain imaging features from YKL40, sTREM and AD markers (BBRC)</b> <sup>DS.3.2.7</sup>	~ 550 MRI	ADNI images processed ICM cohorts (transfer completed!)	July 2018 completed! 15 November 2018 (whole panel)
<b>Proteomic analysis in CSF (KI)</b> <sup>DS.3.2.8</sup>	~ 700 CSF	95% 50 add. samples received in August	September 2018 completed!
+ in plasma	~ 250 Plasma	100%	June 2018 completed!
<b>IRS and Autophagy markers in CSF (SARD)</b> <sup>DS.3.2.9</sup>	~ 200 CSF	25 samples (technical batch) Add. samples (transfer completed!)	July 2018 validated! 15 November 2018 (whole panel)

## WP5 – Clinical Validation

### Deliverables status:

- **M5.1.6 Joint F2F to be done between EFPIA and Academic partners in WP3 and WP5**
- D5.1.6.5 Choice of possible additional biomarkers to analyse from patients' samples – Barcelona Workshop minutes (WP3/5) has been submitted this month to IMI.
- **M5.3.2 Generation of markers that will be used for patients' stratification**
- Three M5.3.2 related deliverables will soon be submitted :
  - D5.3.2.4 Cholesterol analysis panel in plasma samples (UKB)
  - D5.3.2.7 Brain imaging analysis (BBRC)
  - D5.3.2.9 IRS/Autophagy in CSF (SARD)

**We're looking forward to receiving those reports!**

### Upcoming deliverables:

- **M5.3.3 Analysis pipeline and taxonomy validation**
- D5.3.3.1 Identification of clusters of patients belonging to one or multiple mechanisms of the taxonomy (ICM, Fraunhofer, BBRC)

### News:

- Please remember to register for both the General Assembly on <https://doodle.com/poll/qvx4fwwcs39zxebk>
- and the Final Symposium <https://www.aetionomy.eu/en/events/aetionomy-final-symposium/IMI-Project.html> soon!
- Did you know that all the project deliverables submitted to IMI are available on our BSCW Server?

<https://bscw-biosc.scai.fraunhofer.de/bscw/bscw.cgi/42644>