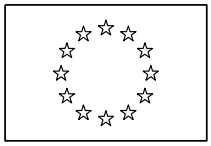

EUROPEAN COMMISSION
Directorate-General for Communications Networks, Content and Technology

Components and Systems
**Photonics**

Brussels,
[ARES date dd-/mm/yyyy]

# REVIEW REPORT

| | |
|---|---|
| **Grant Agreement (GA) number:** | 688448 |
| **Project[1] Acronym:** | COBIOPHAD |
| **Project title:** | COMPACT BIOPHOTONIC PLATFORM FOR DRUG ALLERGY DIAGNOSIS |
| **Type of Action:** | IA |
| **Start date of the project:** | 01/01/2016 |
| **Duration of the project:** | 36 |
| **Name of the representative of the project's coordinator and organisation:** | Ángel Maquieira Catala |
| **Period covered by the report**: | 01/01/2016 to 30/06/2017 |
| **Periodic report:** | 1st |
| **Date of submission of the periodic report:** | Initial submission: 28/08/2017<br>Revised report: 06/10/2017 |
| **Date of latest version of Annex 1 to the GA (Description of the Action - DoA) against which the assessment is performed** | 10/04/2017 |
| **Date of review meeting (if applicable):** | 21/09/2017 |
| **Name of external experts assisting in the project assessment (if applicable)** | Patrick Broyer<br>Gerd Illing |
| **Name of Project Officer drafting the report:** | Christoph Helmrath |

[1] The term 'project' used in this template equates to an 'action' in certain other Horizon 2020 documentation

## 1. Overall assessment

| Overall assessment |
| --- |
| Overall good progress is evident and the project has achieved most of its objectives and milestones for the period with some, mostly minor, deviations. |
| **General comments** |
| Reports, review presentations and demonstrations were of good quality and gave a clear insight into the work undertaken and results achieved. The cooperation between the partners seemed to be effective leading to a first reader prototype and several versions of prototype discs were developed. The technical and scientific achievements for the reviewed period are largely acceptable. However, some technical difficulties lead to significant delay of the final version of the disc, selection of the pre-concentration method as well as synthesis of the full 10 allergy determinants of the expected panel. The performance of the expected Limit of Detection (LOD) is not yet reached although it is not too far from the target. All the building blocks (disc design, disc reader, raw data treatment algorithm, material selection, spotting and determinants selection) are almost available to start the integration work with immunoassay in the second period. The LOD, dynamic range and time to result (30 min) is not yet demonstrated and there is a substantial risk that the consortium will not be able to reach all the system requirements (fast, easy, sensitive, specific, dynamic range, low cost etc.) at the end of the project, as there are only 15 months remaining.<br>The project deliverables are largely acceptable and the quality of the results is good compared to the expected results targeted in DoA, even if some delays exist at the level of demonstration at the date of the review.<br><br>Up to now innovation activities are essentially linked to the selection and synthesis of the determinants panel specific to each betalactam allergy reaction and they aimed at the availability of a 1st reader and disc prototype, which convincingly demonstrated its potential to integrate the fluidic sequence in a simple and fast way.<br><br>Ethics requirements have been met. The relevant authorisations and approvals have been obtained to prepare the next phase of the project.<br><br>The project work plan was largely adhered to. However, some delays have been incurred due to technical issues. The project objectives are still relevant<br>The Dissemination and Use Plan is largely acceptable at this stage if recommendations for the next period will be taken into account.<br>The project management was fully adequate.<br>The contribution to the state of the art is linked essentially to the synthesis of 10 IgE determinants, which is new, and to the ability to detect the full panel on a disc format. The 10 determinants of allergy have potential for a strong progress compared to the state of the art but need more patient samples to fulfil the expected betalactam allergy panel testing.<br><br>The resources employed by the beneficiaries were in line and commensurate with the progress |

demonstrated. The incurred costs were necessary, economic and justified by the demonstrated progress.
The likelihood that the project will achieve the expected results and objectives, and that it will have the overall envisaged impact is deemed to be reasonable, if recommendations are taken into account.
It is recommended that the project continues.

**Recommendations concerning the period under review**

The resources were used to yield the deliverables described in the DoA and minor deviations were fully justified. Recommendations during the 1st review meeting and in the preliminary feedback report were already taken into account: Within 2 weeks the consortium provided a revised period report (PR core), a completed Use of Resources (UoR) and financial summary, as well as a revised Plan for Exploitation and Dissemination of Results (PEDR) D6.7 with comprehensive information regarding the state of the art and freedom to operate.

**Recommendations concerning future work**

There is a strong need to fix the "loose ends" before engaging in the manufacturing of the final design of the disc and reader. In particular, recommendations are given below.

The main recommendation is to focus on the objective of demonstrating the LOD on spiked IgE in real serum samples including pre-concentration step inside the disc.

**Technical & scientific topics :**

1. **Thorough characterisation of the system, e.g. detection performances of reader and disc togetherwithout biological samples**: The detection performances of the reader and the disc without biologic sample must be established and clearly demonstrated. The LOD, standard deviation, dynamic range and repeatability/reproducibility (same reader, same disc and different readers and different discs) must be measured to demonstrate that the selected mode of reading associated with the disc design and material is able to reach the expected LOD. The LOD and standard deviation will be degraded by the addition of biological layer mainly due the serum matrix variability and non-specific background.

2. **Clarification and selection (urgent) of the detection principles and pre-concentration steps:** As the LOD is key for the value of the demonstration, it is recommended to perform a deep evaluation of the colorimetry detection with the spotted determinants and serial dilution of IgE including the pre-concentration steps (this could happen outside of the disc for testing if magnetic microparticles are used). This could be done with standard IgE, not necessarily the synthetized precious determinants specific for betalactam allergy. If the expected LOD described in DoA could not be reached, fluorescence detection (subtract and enzyme) is suggested to improve LOD. To limit the fooling effect and background, standard passivation methods like BSA, PEG or both and wash buffers (type of buffer, number of washes and volume) should be studied. Detection associated to pre-concentration steps must be selected in the 2 coming months to not impair the whole project schedule.

3. **Preliminary tests of the system using real samples should be performed as soon as possible, preferably with the envisaged method for pre-concentration:** As with all immunoassay reaction, the LOD will be limited by the non-specific background (assuming that the optical reader detection is enough sensitive and the noise background coming from the disc material is non-significant). It is recommended to perform as soon as possible tests with non-spiked real serum with the selected pre-concentration method outside of the disc and spotted determinants (select a model of IgE available, not necessarily the IgE specific for betalactam allergy in case of difficulty to produce them, see remark 5) to establish the noise coming from the serum matrix and estimate the expected LOD (3 x Standard Deviation of noise). Also, known concentrations of spiked IgE into serum must be established (calibration curve) to evaluate achievable dynamic range, SD and LOD. Results must be presented in comparison with a commercial immunoassay performed in central labs.

4. **Partners SINTEF and STRATEC should provide a draft of the disc design to check if the final full protocol can be implemented:** It is recommended to check (based on disc CAD) if the final layout of the disc is able to integrate the selected pre-concentration method (microparticles or micropillars) including wash buffer, the increased sample volume if needed (to increase sensitivity performances) and with 10 samples and 10 determinants as proposed in DoA. If there is not enough space on the disc, it is recommended for the final demonstration to reduce the number of samples per disc, increase sample volume and to focus the work on a layout able to reach the expected sensitivity.

   Concept and design are required how the pre-concentration steps will be integrated into the disc; in particular the way to concentrate the microparticles (if used) and the way to embed and store the wash buffer volume inside the disc, as it is supposed that the end-user should only have to mix a sample with reagent and then dispense a volume inside the disc inlet.

5. **Clarify the IgE material availability**: The consortium needs to clarify and inform the Commission whether sufficient amounts of IgE material from patients can be obtained to allow for disc functionalisation and of the fall-back solution to be able to perform the final evaluation of the system in hospital (**by the end of 2017**).

**IP, communication and dissemination topics :**

6. Once the design of the system has been finalised the Freedom to Operate needs to be re-assessed. Possible patents and trade secret know-how must be clearly identified and strategy explained for the next period. The revised Plan for Exploitation and Dissemination of Results (PEDR) D6.7 is a good base and has to be continuously updated.
7. The external patent situation needs to be monitored. The consortium identified few patents which could be problematic; those patents status and the related possible commercial product status must be updated and a clear IPR strategy has to be derived for the project, i.e. as patentability is not fully evident for most technologies involved.
8. The final version of the PEDR should update the information provided in D6.7 and it should

include all dissemination activities in a tabular form.

9. The Website of the project should be updated regularly (e.g. with all public deliverables and documents produced by the project, publications, etc.). A short video demo (if there is not confidentiality issue) should be uploaded on the website.
10. Each future deliverable/report should mention the name(s) of its author(s) as well as a confirmation that any work or result described is genuinely a result of efforts pertaining to the project and that any external source is properly referenced.
11. All communication activities related to the project should acknowledge the context of the Photonics PPP for example by stating that the project is an initiative of the Photonics Public Private Partnership.
12. The necessary supply chain for manufacturing has to be defined, potentially relevant partners in the health system have to be identified and the business case has to be continuously updated.

The follow-up of these recommendations shall be addressed in the next Periodic Report and at the next review meeting.

## 2. Objectives and Workplan

| **Is the progress reported in line with objectives and work plan as specified in the DoA? If there are significant deviations, please comment.** | Yes |
|---|---|

Overall the project has made significant progress mostly in line with the description given in the project proposal. Most of the deliverables and milestones have been achieved. Looking at the general project schedule, some minor delays exist due to technical difficulties and delays on the selection of biological sequence but those delays are not critical as this stage. Major difficulties can also be linked to the starting TRLs of individual core technologies, which were overestimated in the DoA.

The project has demonstrated a good level of integration showing effective collaboration between partners through the different WPs. Concrete deliverables like disc reader prototype, different version of microfluidic discs and synthesis of determinants are examples of the good interaction and integration between work packages.

In relation with the DoA, the status of each WP is commented hereafter :

WP1 (Hardware and software development): Minor deviation; Due to the extra development of ODD (additional hardware, new electronics, etc.) the time needed to develop the 1st prototype was longer than expected and lead to a delay moving the initial MS1 from M12 to M19. The impact of this significant delay was minimised due to the fact that OPTOEL generated simulated images allowing for progress on data / images analysis treatment without having the 1st prototype.

WP2 (Platform microfluidic disc development): Minor deviation; Task 2.2 and 2.3 were delayed due to technical difficulties or difficulties to reach an agreement on design. Task 2.2 took longer time to perform verification studies in the performances of the pre-concentration step (micropillars or microparticles) and the selection has not been made at the date of the review. This delay is well justified, as the selection of the right pre-concentration solution is critical to reach the expected LOD and for integration inside the

disc. Task 2.3 was delayed due to difficulties to reach an agreement on the final layout of the disc for molding. In WP2 it is well justified that the partners postponed the final design, as it is critical to produce an error-free mold insert. The impact was minimized as Stratec partner has manufactured a machined flat disc to debug the reader prototype.

WP3 (Sample selection, screening immunoreagents): Minor Deviation; The recruitments of cases and control patients samples is on schedule. However there is a lack of samples to address the 10 targeted betalactams that should be integrated in the panel (spotted determinants on the disc are not yet available). The consortium has activated a mitigation plan to contact others hospitals or departments inside the primary hospital in order to collect more samples.

WP4 (Assay development and integration): Minor Deviation. The integration work was delayed due to design modification made on the disc related to control of the reader. Disc material selection (COP), immobilised reagents and disc microfluidic structures were nevertheless validated. However, the WP is delayed as the disc manufactured by injection molding was not yet tested.

WP5 (Assay validation and Pre-Industrial validation): No deviation.

WP6 (Dissemination and exploitation): No deviation. The use of additional PMs for EUX partner compared to the DoA was well justified.

WP7 (Project Management): No major deviation. Proactive project management was performed. The change in partners (Stratec and LUM) and the transition were well managed. The concrete deliverables and set of results obtained shown in the meeting review and technical reports demonstrated that the collaboration and synchronisation of the different WPs was effective with no major deviation from the established workplan.

WP8 (Ethics requirements): No major deviation. The required ethical authorisation was prepared and obtained. The team launched mitigation actions to gain access to more patient samples aiming to define the determinants allergy panel (implication of additional hospital).

| **Are the objectives of the project still scientific and /or technological relevant?** | Yes |
|---|---|

The objectives of the project are still scientifically and industrially relevant as no similar approach does exist today for an improved diagnosis of betalactam allergy in this rapid (30 min) and easy format (ready to use consumable format) with a large panel (10).

The objectives to deliver a first prototype are still achievable in the timeline if the methodology and approach focus on the first target. Sensitivity has to be achieved on real serum samples with a deep qualification of the performances of the pre-concentration disc with reader and with spotted determinants.

There is however a relevant risk that the full performances for the system targeted in the DoA could not fully reached by the end of the project (0.1 UI/mL in 30min, with 10 determinants and samples per disc and with ready to use low cost disc, embedded reagents with pre-concentration process inside the disc). In this case it is recommended to focus on sensitivity including pre-concentration process inside the disc

even with lower number of determinants and longer time to result.

The approach and methodology is overall adequate but must be adapted to address carefully the identified risks (see below and recommendations parts).

| **Are the critical implementation risks and mitigation actions described in the DoA still relevant?** | Yes |
|---|---|

The critical implementation risk and mitigation action described in DoA and detailed in the report D7.3 are still relevant.

No additional risks have been identified compared to the list given in D7.3 report. However the reviewers highlighted that the impact and probability of the following risks are considered higher than proposed in D7.3 and must be considered with priority :

- R1.4, R.2.4: Bioluminescence detection method does not reach the needed performance: The method for detection (bioluminescence or fluorescence) associated with the disc must be evaluated with spiked serum samples and selected within the 3 coming months. Otherwise there is a significant risk to discover too late that the overall method of determinant detection is not able to reach the targeted LOD, SD and dynamic range.

- R1.6: decrease of precision: using the 1st prototype of disc spotted with few determinants, optical detection reader process and the selected method of concentration, the consortium must evaluate if the new hardware, firmware and raw data treatment is able to reach the degree of precision expected in the DoA.

- R2.1: Quality of plasma extracted: Pre-concentration methods (micropillar or microparticles) must be tested as soon as possible using real spiked serum sample to evaluate if the concentration factor expected to reach the sensitivity could be obtained. The evaluation must be done with real healthy serum sample to take in account the tolerance of the micropillar or microparticles to the biological matrix effect.

- R2.4: Need of large input sample to achieve the targeted sensitivity: This risk is linked to the selection of the pre-concentration method and could impact the design of the disc (reduce the number of samples tested per disc) if more surface is needed to incorporate larger sample volume. Consequently, the risk on detection method and on pre-concentration methods must be treated in priority to decide if larger sample volume will be needed before launching the final mould insert for disc fabrication.

- R2.6: Low sensitivity due to loss of microparticles during process in the disc: The method for pre-concentration (micropillars or microparticles) is not yet defined at the time of review although this is critical for the ultimate sensitivity performances of the proposed system.

| **Have the pilots/study cases started to showcase innovative results as described in the DoA?** | No |
|---|---|

In line with the DoA the project did not yet reach the status to demonstrate innovative results using the developed prototype of instrument and microfluidic disc as the 1st part of the project was dedicated to develop and test the building blocks (produce determinants, develop the microfluidic disc, develop the

| | |
|---|---|
| experimental set up and disc reader prototype). | |
| **Have the ethics specific deliverables and/or requirements due for the current period been properly addressed and approved?** | Yes |
| Yes, the ethics deliverables were adequately addressed and approved during the reviewed period to prepare the prototype testing using clinical samples from patients during the 2nd part of the project (retrospective and retrospectives studies). All the required authorizations were obtained. | |
| **Have the comments and recommendations from previous assessments been taken into account?** | |
| Not applicable. | |

## 3. Impact

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|---|---|
| **Does the work carried out follow the plan detailed in the DoA to deliver innovation to the markets in order to strength the competitiveness and grow of related companies? Give information on the relevant innovation activities carried out (prototypes, testing activities, clinical trials) and/or new product, process or method (to be) launched to the market, if any.** | Yes |
| The workplan detailed in the DoA to deliver innovation to market was followed during the 1st period of the project. The following main activities and deliverables are relevant to improve competitiveness (know-how of the companies on process and method):<br><br>- Synthesis of new IgE specific determinants for each antibiotics allergy allowing panel detection of allergy. This is a generic know-how developed during the project and could be used and transferred to any kind of immunoassay based in vitro detection platform used to detect the allergy. This does not depend on the success of the microfluidic disc format proposition.<br><br>- Know-how development regarding the process to perform IgE determinants spotting and assembling of the microfluidic centrifugation disc (or others microfluidic disposables).<br><br>- Design and manufacturing of a very low cost (~ 350€) reader for centrifugation microfluidic disc. | |
| **Does the work carried out follow the plan detailed in the DoA to get results contributing to the expected impacts detailed in the relevant Work Programme and to any other environmental and social important impacts?** | Yes |
| The work performed is in line with the plan detailed in the DoA and is relevant to the work programme. The consortium performs the proposed plan in order to have a potential impact on antibiotics allergy diagnosis (mainly more accurate diagnosis reducing the overall cost of the health system). This is the significant impact goal and the consortium is well in line with this unique goal to demonstrate the value of the new approach proposed in the project. | |

| **Does the work carried out will have an impact on SMEs?** | Partially |
|---|---|
| It is not yet demonstrated that the work carried out will have a significant impact on the SMEs. The technological work and deliverables performed on microfluidic disc and reader prototype are standard engineering work and will not by itself improve significantly the competitiveness of the SMEs. However, the panel IgE determinants synthetised and characterised could have an impact for one SME (Dr Fooke) by developing or proposing new kits or new services not necessarily associated with the COBIOPHAD reader and disc. | |

## 4. Implementation

| **Has the project been efficiently and effectively managed? Is the management of the project in line with the obligations of beneficiaries (including ethics and security requirements, risk and innovation management)?** | Yes |
|---|---|
| The project has been efficiently managed during the 1st period under review. 3 main consortium meetings with all the partners were held during the period to share objectives and synchronize activities within the different work packages. Concrete deliverables were shown during the review meeting, e.g. samples of a disc prototype, a functional compact disc reader, the experimental set up, a spotting system to functionalise the disc with allergen determinants and analysis software. Overall, full evidence was provided that the project is actively run and well managed in order to deliver the expected building blocks planned in the DoA.<br><br>Regular conference calls and videoconferences between partners working on the same WPs were held to reach agreements mainly concerning the design and manufacturing of the reader prototype and microfluidic disc design. The consortium also effectively put in place monthly reports that allow for a rapid and frequent overview of each partner's contribution (posted in the website). This also enables the project coordinator to rapidly manage technical issues or anticipated problems thereby minimising delays.<br><br>Following the changes of 2 partners in the consortium (Sony was substituted by STRATEC on 1st July 16, DAS was substituted by LUM from 1st Jan 17), the grant agreement was upgraded accordingly and the amendment signed. | |
| **Is the contribution of each beneficiary in line with the work committed in the DoA?** | Yes |
| All partners contributed in line with the work described in the DoA with only minor deviations. | |
| **Have the beneficiaries disseminated project results (foreground) in scientific publications as planned in the DoA, including the deposition of publications in open access repositories? Has the dissemination plan been updated?** | Yes |
| Innodecs has created a report to evaluate the scientific content and innovations that could be protected by IP or by trade secret as described in the DoA.<br><br>2 poster presentations have been presented in the 1st review, which represent minimal activity for this | |

kind of project 19 months after the project started, although no quantitative target for the number of publications / poster described is provided in the DoA. The publications/posters are not yet referenced on the COBIOPHAD website (open access repositories).

However, the consortium (see recommendations above) must clearly show for the next phase a clear view of number of publication with peer review, oral and poster presentation, participation to trade fair and scientific conferences,

The dissemination plan has been updated and is acceptable.

| **Have the beneficiaries disseminated and communicated project activities and results by other means than scientific publications (social media, press-release, the project web site, video/film…) as planned in the DoA?** | Partially |
|---|---|

A communication kit has been created containing various materials, e.g. press release and posters/lectures as described in the DoA. However, it is unclear how this has been used to communicate and disseminate project results and the exact dissemination results remain unclear and not quantified so far. There is no existing indicator to quantify the dissemination actions to the general public and how the public will become aware of this EU funded project.

However, the COBIOPHAD website which is the main public entrance information portal must be reinforced to contain up to date non-confidential information, in particular :

- Short Demo Video of the disc and reader
- Update poster and publications (poster / publications)

Communication via social media like Twitter and Facebook as described in the DoA (p35, §public communication and p32, Task 6.3) was not yet put in place at the date of the review. Activities to communicate results of the COBIOPHAD project and regular updates on the website targeting the general public remain to be done during the 2nd period of the project (number of website visits might serve as an indicator).

| **Has the plan for exploitation of results, in particular with regards intellectual property rights, been appropriately planned and executed, as described in the DoA? Has the exploitation plan been updated?** | Yes |
|---|---|

Using the INNODEC docs filled and exploited, the consortium has appropriately executed the work planned in the DoA. Conclusion from this work shows that the COBIOPHAD will be difficult to protect by patent (novelty not sufficient) and it is suggested to keep the technical outcome as secret know-how.

Regarding commercialisation 3 main scenarios were set up and discussed. A first estimation for the costs of reader and disc manufacturing was performed.

The exploitation plan was not updated at the date of review.

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| **Has the Data Management Plan (DMP) been appropriately executed? Give details if an update of the DMP is needed.** | Yes |
| | |

## 5. Resources

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| **Are the resources used in the relevant period connected with the project as described in the DoA and are necessary to achieve its objectives? Have been they used in a manner consistent with the principle of sound financial management, in particular regarding economy, efficiency and effectiveness?** | Yes |

The resources for the considered period under review were used as described in the DoA and were necessary to achieve the deliverables of the first period. Appropriate deliverables show that the consortium uses the resources adequately to develop the needed technical process, methods and core technologies (e.g. disc prototype, disc reader, IgE determinants synthesis, etc.

Some deviations between the planned and the actual expenses due to technical issues or delays were clearly detailed during the review and fully justified. Main gaps between actual versus plan resources are :

WP3, CHRUM : 18 PM planned but 28 PM used

WP1, OPTOEL : 20 PM Planned but 25 PM used

WP2, SINTEF : 18 PM Planned but 24.6 PM used

The consortium has taken adequate actions at the right time to reallocate or postpone the resources.

Considering the presentation done on expenditure versus plan and concrete deliverables compare to what was described in the DoA, the project is well managed in term of economy, efficiency and effectiveness for the resources.

## Annex 1 – List of deliverables

| N° | Deliverable name | Due date | Receipt date | Status [Pending] [Request for revision] [Accepted] [Rejected] | Comments |
|---|---|---|---|---|---|
| D1.1 | First reader prototype finished | 31-Dec-16 | 07-Aug-17 | accepted | |
| D1.2 | Second reader prototype completed | 31-Dec-17 | | Pending | |
| D1.3 | Cloud UI & clinical analysis software | 31-Dec-17 | | Pending | |
| D2.1 | Prototype disc specifications and microfluidic design concept | 31-Mar-16 | 31-Mar-16 | accepted | |
| D2.2 | Prototypes of the detection zone | 30-Sep-16 | 30-Sep-16 | accepted | |
| D2.3 | Prototypes of the combined pre-concentration and detection system | 31-Mar-17 | 31-Mar-17 | accepted | |
| D2.4 | Prototypes of the combined sample preparation, pre-concentration and detection system | 30-Sep-17 | | Pending | Critical aspect of pre-concentration vs final design of the disc. |
| D2.5 | Advanced disc prototypes | 31-Dec-17 | | Pending | |
| D2.6 | Report on the manufacturing of the discs, prototypes of the QC system and performances of QC System | 30-Jun-18 | | Pending | |
| D3.1 | Ethics approvals for the research with humans | 31-Jan-16 | 28-Apr-16 | accepted | |
| D3.2 | Ethics approvals for the research with human cells/tissues | 31-Jan-16 | 28-Apr-16 | accepted | |
| D3.3 | Confirmation by the competent Institutional Data Protection Officer or authorization or notification by the Data Protection Authority | 31-Jan-16 | 01-Mar-16 | accepted | |
| D3.4 | IgE standards for the BLC determinants | 30-Sep-16 | | Pending | Need to submit the report, critical relevance |
| D3.5 | Samples identified for method development | 31-Dec-16 | 29-Dec-16 | accepted | |
| D3.6 | Monoclonal antibody anti-IgE, receptors and all other reagents | 30-Sep-17 | | Pending | |
| D3.7 | Revised haptenized determinants and immunoreagents | 31-Dec-17 | | Draft | |
| D3.8 | Samples selected for system validation | 31-Dec-17 | | Pending | |
| D4.1 | Pre-evaluation of the reader, discs, and reagents | 30-Jun-17 | | Pending | Delayed. Need to evaluate LOD and SD with real serum samples |
| D4.2 | Performance evaluation of the non-integrated assay | 31-Dec-17 | | Pending | |
| D4.3 | Report on integration and assays testing | 30-Jun-18 | | Pending | |
| D5.1 | New diagnostic device (COBIOPHAD) characteristics and performances | 31-Dec-18 | | Pending | |
| D5.2 | Work-up of new international recommendations for the patient allergy medical care | 31-Dec-18 | | Pending | |
| D5.3 | Technical dossier including the analysis of the compliance with the defined requirements | 31-Dec-18 | | Pending | |
| D6.1 | Project presentation | 31-Jan-16 | 23-Feb-16 | accepted | |
| D6.10 | Report on the 2nd iteration NPA | 30-Sep-18 | | Pending | |
| D6.11 | Final PEDR | 31-Dec-18 | | Pending | |
| D6.12 | Final Communication kit about the project | 31-Dec-18 | | Pending | |
| D6.13 | Business Plan | 31-Dec-18 | | Pending | |
| D6.2 | Data management plan (DMP) | 30-Jun-16 | 11-Jul-16 | accepted | |
| D6.3 | First Communication kit about the project | 29-Feb-16 | 01-Mar-16 | accepted | |

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|---|---|---|---|---|---|
| D6.4 | Web site | 31-Mar-16 | 31-Mar-16 | accepted | |
| D6.5 | Report on the 1st iteration NPA | 30-Jun-16 | 01-Jul-16 | accepted | |
| D6.6 | First draft PEDR | 30-Sep-16 | 23-Sep-16 | accepted | |
| D6.7 | Revised PEDR | 30-Jun-17 | 30-Jun-17 | accepted | Revised version submitted on 06/10/17 |
| D6.8 | Second Communication kit about the project | 30-Jun-17 | 30-Jun-17 | accepted | |
| D6.9 | Short film magazine | 30-Sep-18 | | Pending | |
| D7.1 | Infrastructure for Management Service and Support | 31-Mar-16 | 31-Mar-16 | accepted | |
| D7.2 | Quality Plan | 31-Mar-16 | 31-Mar-16 | accepted | |
| D7.3 | Risk Management Plan | 31-Mar-16 | 31-Mar-16 | accepted | |
| D7.4 | Brief Interim Status Report | 30-Sep-16 | 30-Sep-16 | accepted | |
| D7.5 | Progress and Cost Reporting for the first period | 30-Jun-17 | 28-Aug-17 | accepted | |
| D7.6 | Progress and Cost Reporting for the second period | 31-Dec-18 | | Pending | |
| D7.7 | Final Report | 31-Dec-18 | | Pending | |
| D8.1 | POPD - Requirement No. 6 | 31-Jan-16 | 20-Jan-16 | Approved | |
| D8.2 | H - Requirement No. 4 | 31-Jan-16 | 20-Jan-16 | Approved | |
| D8.3 | HCT - Requirement No. 5 | 31-Jan-16 | 20-Jan-16 | Approved | |

## Annex 2 – List of milestones

| N° | Name | Planned Date | Achieved [Yes] [No] [Partially] | Comments |
|---|---|---|---|---|
| 1 | 1st Functional modified ODD | 01-Jan-17 | Yes | |
| 2 | Decision on the pre-concentration and sample preparation method | 01-Jul-17 | Partially | Pre-concentration process to be implemented not yet finalized |
| 3 | Decision on the detection method | 01-Jul-17 | Partially | Detection method to reach the targeted LOD not yet decided |
| 4 | Decision on determinants and other reagents | 01-Jul-17 | Partially | Determinants partially defined, needs update |
| 5 | Selection of materials and methods of disc manufacturing. | 01-Jul-17 | Yes | |
| 6 | Experimental set-up of the integrated HW+SW achieving automated functionality | 01-Jan-18 | No | Not applicable for the considered period |
| 7 | Assay methodology development | 01-Jan-18 | No | Not applicable for the considered period |
| 8 | Strategies for the immobilization of determinants | 01-Jan-18 | No | Not applicable for the considered period |
| 9 | Complete set of discs manufactured | 01-Jul-18 | No | Not applicable for the considered period |
| 10 | Prototype of multi-BLC specific IgE diagnostic system | 01-Jan-19 | No | Not applicable for the considered period |

## Annex 3 – Agenda

| Meeting Agenda | | | |
|---|---|---|---|
| 30' | 8:30 | Private meeting reviewers & PO | |
| 15' | 9:00 | Welcome, round table introduction, review of agenda | All participants |
| 20' | 9:15 | Overview of the project, scientific objectives and achievements for the period, deliverables & milestones achieved | Ángel Maquieira UPVLC |
| 30' | 9:35 | WP1: Progress toward objectives for the period, deliverables, milestones, key results, critical issues and remedial action taken, outlook | Brindus Comanescu OPTOEL |
| 30' | 10:05 | WP2: Progress toward objectives for the period, deliverables, milestones, key results, critical issues and remedial action taken, outlook | Anna Franquesa-Vázquez STRATEC |
| 30' | 10:35 | WP3: Progress toward objectives for the period, deliverables, milestones, key results, critical issues and remedial action taken, outlook | Dolores Hernández Fernández de Rojas HULAFE |
| 10' | 11:05 | Ethical issues | CHRUM |
| 30' | 11:15 | WP4: Progress toward objectives for the period, deliverables, milestones, key results, critical issues and remedial action taken, outlook | Sergi Morais UPVLC |
| 30' | 11:45 | Summary of management activities, actual expenditure vs plan, resources spent vs plan | Teresa Molina-Jiménez UPVLC |
| *60'* | *12:15* | *Lunch break* | |
| 45' | 13:15 | Dissemination and exploitation | Ian McKay EUX |
| 90' | 14:00 | Private meeting reviewers & PO | |
| 20' | 15:30 | Feedback and discussion | All partners |
| 5' | 15:50 | Any other business | All partners |
| | 15:55 | End of meeting | |

## Annex 4 – Attendance

| Name | Organisation | Email | Signature |
|---|---|---|---|
| Sergio Peruzzi | LUMENSIA Services | speruzzi@lumenstia.com | |
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