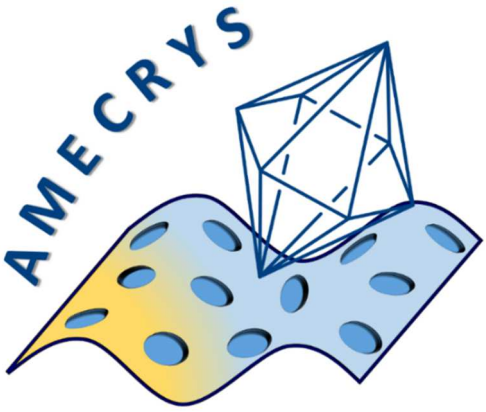
The AMECRYS project is funded by the European Union's Horizon 2020 programme under grant agreement No. 712965

Deliverable number	D7.3	Due date	30/09/2017
Deliverable title	Dissemination and Exploitation Plan	Issue date	29/09/2017
WP number	WP7	Author(s)	Joop ter Horst, Claire Lynch
Lead Beneficiary	UST	Reviewer(s)	All partners
Deliverable type	Report	Status	Submitted
Dissemination level	Public		

AMECRYS - *Revolutionising Downstream Processing of Monoclonal Antibodies by Continuous Template-Assisted Membrane Crystallization*



Deliverables D7.3

Dissemination and Exploitation Plan (V1.0)

Version	Modifications	Date	Author(s)
1.0	Initial document creation	19/06/2017	Joop ter Horst, Claire Lynch

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Table of Contents

1 Executive Summary

This is deliverable D7.3 Dissemination and Exploitation Plan of the H2020 project AMECRYS (GA No 712965). This work was carried out as part of WP7 Communication, dissemination & exploitation activities. An important objective of the AMECRYS project is to ensure the far-reaching Dissemination and Exploitation of the project's results and outcomes. These activities will be carried out throughout the project and will continue after the project finishes to maximise the impact of the research. The aim of this plan for the AMECRYS project is to set the frame and scope for the AMECRYS Dissemination and Exploitation activities, including potential impact. The activities are listed in detail and are incorporated into an outline schedule in this plan.

2 Definitions

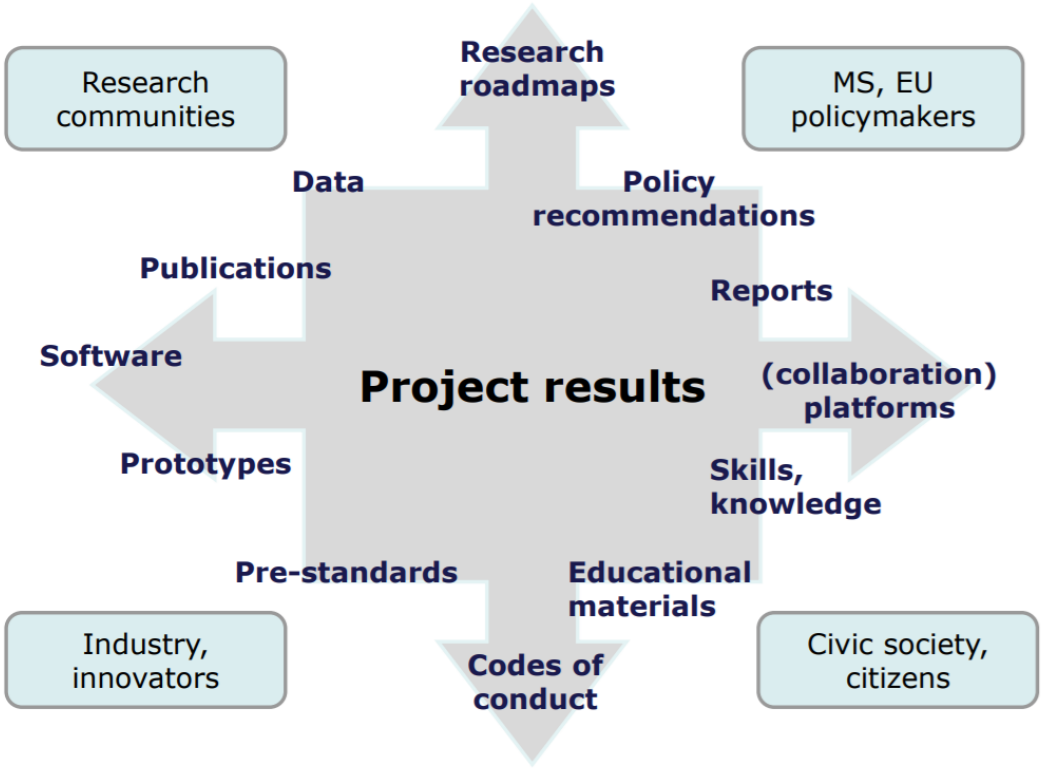
The European Commission define the difference between communication, dissemination and exploitation as:

Communication means taking strategic and targeted measures for promoting the action itself and its results to a multitude of audiences, including the media and the public, and possibly engaging in a two-way exchange. The aim is to reach out to society as a whole and in particular to some specific audiences while demonstrating how EU funding contributes to tackling societal challenges (see Grant Agreement Article 38.1).

Dissemination is the public disclosure of the results of the project in any medium. Disclosure may sound passive, like a shop opening up, but it is an activity, like a shopkeeper attracting customers. It is a process of promotion and awareness-raising right from the beginning of a project. It makes research results known to various stakeholder groups (like research peers, industry and other commercial actors, professional organisations, policymakers) in a targeted way, to enable them to use the results in their own work. This process must be planned and organised at the beginning of each project, usually in a dissemination plan (see Grant Agreement Article 29).

Exploitation is the use of the results during and after the project's implementation. It can be for commercial purposes but also for improving policies, and for tackling economic and societal problems (see Grant Agreement Article 28).

	Communication	Dissemination	Exploitation
About	About **project and results** (including the public and media)	**About results only,** describing and **making available results** so that **they can be used**	**Making use of results**, for scientific, societal or economic purposes
Audience	Multiple audiences beyond project's own community	Audiences that may use results in their own work e.g. peers	Groups and entities that are making concrete use of results
Aim	Inform and reach out to society, show the benefits of the research	Enable use and uptake of results. All results which are not restricted due to the protection of intellectual property, security rules or legitimate interests	All results generated during project. Participant shall make best efforts to exploit the results it owns, or to have them exploited by another legal entity
Example	Participation of European Researchers Night (end September each year)	Publication of a scientific article	Filing a Patent
Grant Agreement	GA Article 38.1	GA Article 29	GA Article 28



Sources:

https://ec.europa.eu/research/participants/portal/desktop/en/support/faqs/faq-933.html
http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html
http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/8_result-dissemination-exploitation.pdf

3 Consortium Partners

Full Name	Short Name	Contacts
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3.1 Lead Partner for Work Packages

Lead partner	Related WP(s)
IMP	WP2: Production of mAb/domain & Nanotemplates synthesis
GVS	WP3: Membranes development
CNRS	WP4: Microfluidics for continuous mAbs crystallization
ULB	WP5: Multi-scale modelling & characterization of mAb crystals
CPI	WP6: Prototype design, construction & operation
UST	WP7: Communication, Dissemination and Exploitation

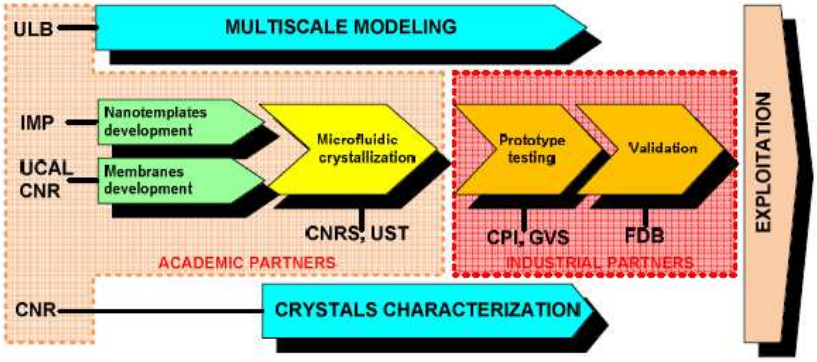
4 Introduction

This plan outlines the **WP7 Dissemination and Exploitation activities** [Months: 1 – 48] for the AMECRYS project, funded by the European Commission's Horizon 2020 Programme in the framework of Future and Emerging Technologies actions (FET-OPEN), Grant Agreement number 712965 which supports the early-stages of the science and technology research and innovation around new ideas toward radically new future technologies. The project runs for four years - from 1 October 2016 (M1) through 30 September 2020 (M48).

The primary goal of the AMECRYS' consortium is to contribute in revolutionizing currently used downstream practices in biopharmaceutical productions - mainly based on expensive and cumbersome multi-step batch chromatography platforms - by developing an innovative Continuous Template-Assisted Membrane Crystallization process as key-unit.

The research activity will be focused on the downstream processing of monoclonal antibodies (mAbs), one of the most important classes of therapeutic proteins in modern medicine, which are used in a wide range of diseases including cancer, cardiovascular, autoimmune, and inflammation.

The AMECRYS network involves two public research organizations, four academic institutions, and three industrial/SME from four European Countries (Italy, England, Belgium, France), gathering complete and complementary chain of expertise to match the Project objectives. The synergies between Partners are illustrated according to their main expertise in the figure below [see also section 3].



This dissemination and exploitation plan (deliverable 7.3) defines key communication, dissemination and exploitation opportunities within the network and to academia, industry and society outside the network through internal meetings, publication of deliverables on Project website, presentations at relevant conferences and symposia, and by publishing results in high impact factor peer-reviewed journals. All scientific publications will be provided as free on-line open access (green/gold model). Final project outcomes will be disseminated at an open

workshop at the end of the project for which key industrial and academic researchers will be invited. The plan will also define strategies and schedule for the exploitation of project's foregrounds with the aim to undertake efficient management of IPs.

All communication and dissemination activities will specify that the project has received EC research funding and display the EU emblem. Publications and other dissemination material include the following statement, as acknowledgement that the work was generated with the financial support of the EC:

The AMECRYS project (October 2016 – September 2020) has received funding from the European Union's Horizon2020 research and innovation programme under grant agreement No. 712965.

The Dissemination and Exploitation plan is a strategic document for the project partners to establish the bases for their communication, dissemination and exploitation (including intellectual property strategy) activities. A periodic review of the plan will take place at each reporting period of the project M30 (March 2019) and M48 (September 2020) for inclusion in the periodic and the final technical reports. To enable tracking of updated versions, this document contains a revision history log. When changes occur, the document's revision history log will reflect an updated version number, the date of the new version, the author making the change, and a summary of the changes.

5 Role of Consortium Members

The consortium members are expected to contribute to the communication and dissemination of the AMECRYS project and its developments through their own actions. Cooperation and assistance on behalf of the partners will be vital in obtaining the various objectives to be attained. The communication, dissemination and exploitation activities of the Consortium members include but are not limited to the following:

- Keeping the Communication, Dissemination and Exploitation plan updated over the developments, changes, and notable findings of AMECRYS in a timely manner by notifying WP7 leader, UST;

<u>Dissemination</u>

- Publication in scientific and peer-reviewed journal papers related to the information gathered by AMECRYS [with open access];

- Informing stakeholders of the progress of AMECRYS at events such as conferences and workshops;
- Ensure all material include reference to European Commission funding, where possible including the EU emblem;

Communication

- Announcements of AMECRYS developments on their organisations' websites;
- Contribute in gathering relevant scientific, industry and policy contacts from their own country and from different available sources and in updating the list by sending information to the dissemination WP7 leader, UST;
- Contribute (also through their organisations press offices) in gathering media contacts from their own country and from different available sources and in regularly updating the list by sending information to the dissemination WP leader, UST;
- Supporting in customising the communication material prepared by the Coordinator/WP leader (in EN) in the country language and for a local audience, if necessary;
- Ensure all material include reference to European Commission funding and the EU emblem;

Exploitation

- Take measures aiming to ensure 'exploitation' of its results (either directly or indirectly), in particular through transfer or licensing.

6 AMECRYS Communication Plan

6.1 Communication Goals

Under Article 38.1 of the Grant Agreement, the consortium has an obligation to:

- promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.
- include the EU emblem and project funding text on all communication activity.

To reach the different target groups and to be tailored to the needs of various audiences, several communication channels will be set. The Project website will be the main info-point concerning the strategy and progresses towards objectives; datasets will be made available on open-access section of the website for at least 5 years after the conclusion of the Project. Web videos (3-4 minute clip) presenting in an accessible way the main Project objectives, strategy, and results will be realized and flowed through popular social networks. Communications to Academia/Stakeholders/CMOs/Regulatory Specialists/Biopharma Companies/Scientific

Associations/Other Projects will be set by delivering leaflets & newsletters, while contributions will be made to general Public by press releases to popular scientific press and school visits at demonstration events.

6.2 Communication target Groups

The communication activities are targeted to a much wider audience, these include:

- General Public
- Schools
- All stakeholders outlined in the dissemination target groups. [section 7.2 below]

6.3 Communication Channels and achievements in the first 12 months

6.3.1 Project Web-site

As discussed in Section 5.1 above, the **project's website** www.amecrys-project.eu/ not only serves as a dissemination tool but also for communicating to a wider target group.

The website serves as a source of information for partners and as an interface to the general public. The project's website is being developed and regularly updated throughout the project and contains announcements of workshops and other events where we are presenting our results, information about project meetings, publishing delivered public reports, etc. All publishable material and reports are being put online, as they are produced.

Up until beginning M12 (7 September 2017), 27,178 people had visited the web home page.
Data from google analytics period 01Oct2016-07Sep2017:

Users in 11 months	746 users	average 69 users/month
Visitors in 11months	27178 visitors	average 2264 visitors/month
Country breakdown of Visitors (%)	Italy	50.5%
	UK	14.6%
	Russia	8.4%
	Belgium	8.1%
	USA	5.9%
	France	5.1%
	Germany	3.4%
	Unknown	2.5%
	India	0.8%
	Brazil	0.7%
Average time spent	6' 19''	

Web videos will be realized to highlight general objectives (M2), relevant results (M25), and final outcomes (M48).

A web video was produced about the project in M2 and is available on the web-site and also on facebook https://www.facebook.com/amecrysproject/videos/713545045485556/. UCAL continuously projected the official AMECRYS video at the "La Notte dei Ricercatori 2017" (The Night of the Researchers 2017") at the University of Calabria on 29 September 2017 [see section 6.3.5].

In addition, information about the project has been included on partner web-site:

CNR https://www.cnr.it/en/news/6551/cristallizzazione-a-membrana-nuovo-metodo-di-produzione-industriale-di-anticorpi-monoclonali

ULB Faculty of Sciences http://www.ulb.ac.be/facs/sciences/projets-europeens.html

6.3.2 Social Networks

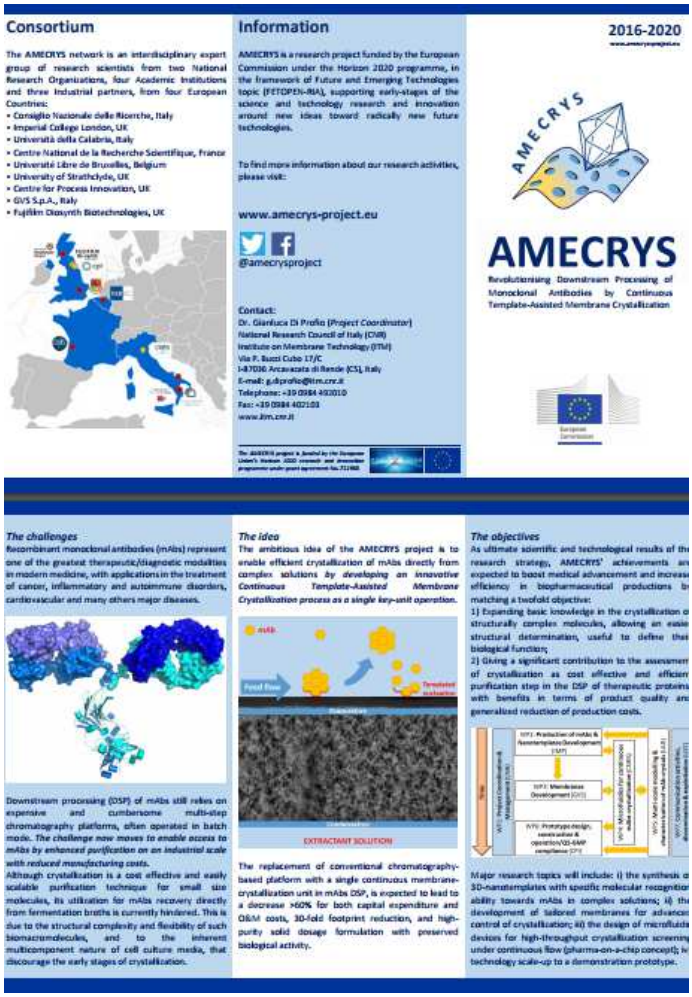
Accounts with the logo of the Project and link to Project Website have been created on the following social networks to increase the external visibility (>M1):

Channel	Link	Statistics (period 01Oct2016 - 07Sep2017)
Twitter	https://twitter.com/AMECRYSProject	Followers 67 Following 252 Tweets 74 Listed - 3
Facebook	https://www.facebook.com/amecrysproject	12 people like this 13 people follow this
ResearchGate	https://www.researchgate.net/project/Revolutionising-Downstream-Processing-of-Monoclonal-Antibodies-by-Continuous-Template-Assisted-Membrane-Crystallization-AMECRYS	18 / 135 people visited the page

6.3.3 Leaflets/Newsletters

Leaflets/newsletters are planned to be delivered to Stakeholders, CMOs, Regulatory Specialists, Biopharma Companies, Scientific associations and other projects. One at the beginning of the Project illustrating objectives, Consortium and expected results (M1), one during the Project (M24) to show main results, and one after the installation of the continuous membrane-crystallization prototype (M48), providing main achievements and advantages compared to conventional batch approaches.

The **first AMECRYS information leaflet** was produced in M1, this provided information about the project objectives and challenges, the consortium, the funding scheme and contact information and was made available as a link on the home page of the web-site.



http://www.amecrys-project.eu/images/documents/AMECRYS---Flyer-1st.pdf

Feedback was received from a Scientific Advisor of a large biotech manufacturing company, showing interest in the project and asking for more information and to keep informed about publications.

The AMECRYS newsletter will be published on an annual basis to provide our stakeholders with useful information on the project's performance. The first newsletter will be dedicated to introducing the project and the consortium, and to give flash news on the activities carried out over the first year. The following issues will provide a more detailed description of the different research activities and anticipate the first concrete results.

The newsletter will be sent by email (in pdf format) to a list of contacts and via social media (in html format), it will also be available on the project website. It is anticipated that feedback will be received.

6.3.4 Press releases

At least 4 **press releases** are planned to technological magazines and newspapers (M12, M24, M36, M48), outlining the concept of the new technology and the achievements.

Prior to the official start of the project, a press-release was published on 11 April 2016 (in Italian and English) on ResearchItaly (the web portal of Italian research edited by MIUR), illustrating the project and its purposes
(see:
https://www.researchitaly.it/en/projects/low-cost-monoclonal-antibodies-amecrys-project-now-underway/).

The press releases (initially planned annually) will be disclosed by CNR Press Office each time there will be significant developments on project activities and results that could be reported to scientific community (scientific journals) or general public (National newspapers or magazines).

In addition, EC platforms will be used to sustain communication activities of EC funded project, particularly FETs. These are FETFX (http://www.fetfx.eu/what-is-fet/) and CORDIS (http://cordis.europa.eu/home_en.html).

6.3.5 Demonstrations

At least one **Demonstration activity** to school visits and general public will be organized by each Partner in dedicated events, completed and planned activities are outlined below.

To date, partner **IMP** have arranged a Science Workshop at Primary School in Surrey in February 2017 and 60 students (Year 1 – 6 year olds) attended. **UCAL** attended "La Notte dei Ricercatori 2017" (The Night of the Researchers 2017") at the University of Calabria on the 29 September 2017 where they did a 12 h of continuous projection of the official AMECRYS video, distributed official leaflets (1,000) and gave face-to-face information (500). More than 60,000 people attended.

Other partners are planning demonstrations as follows:

- **CNR** plan to participate in future European Researchers Night for 2018/2019/2020.
- **UCAL** plan to participate in future European Researchers Night for 2018/2019/2020 if no contrary event will come.

- **CNRS** are planning an animation/presentation at the "Fete de la Science" in 2018 (national French day for science).
- **ULB** will participate in the scientific outreach activities. In particular, there are two science museums that belong to the ULB "Experimentarium de Physique" and "Experimentarium de Chimie"; the Spring Science Festival http://sciences.ulb.ac.be/printemps/ and the "Children's University" http://www.universitedesenfants.be/
- **UST** plan to participate in Explorathon Glasgow as part of European Researchers Night in September 2018 http://www.explorathon.co.uk/glasgow.
- **FDB** are involved in outreach activities e.g. with local schools and will ensure that AMECRYS are included in a future event.

6.3.6 Summary of Communications

Intermediate results of the project will be disseminated by organizing press releases and by realizing leaflets and a web video. All this material will be made available on the project website. Data coming from research activities, which will be decided to not protect by project governing bodies, will be uploaded on OpenAIRE 2020. A report on completed communication activities will be included in periodic and final reports (Deliverables D1.5, D1.10, D1.14).

	Tool	Item	Target audience	Timing	Impact	Progress
Communication activities	Project website	Web video (3-4 minute clip)	Consortium/General Public	M2/M25/ M48	Usage logs >1000/yr	27,178 visits – See 7.3.1
	Social networks	Facebook/Twitter/YouTube etc.	General Public	>M1	Usage logs >10000/yr	Ongoing - See 7.3.2
	Leaflets/Newsletters	EMS/Antibody Society/EMH/EFCE/AJChE/EuroMAbNet-EMAN/AAAS etc.	Stakeholders/CMOs/Regulatory specialists/Biopharma Companies/Scientific associations/Other Projects	M1/M24/ M48	Getting feedback	See 7.3.3
	Press releases	Focus/The Scientists/National newspapers/Horizon Magazine/Project Stories etc.	General public	M12/M24/ M36/M48	Getting feedback	See 7.3.4
	Demonstrations	Researchers day/Light to Research/Research Night etc.	School visits/General Public	<M48	9 events;>200 participants	1 completed – See 7.3.5

7 AMECRYS Dissemination Plan

7.1 Dissemination Goals

Under Article 29 of the Grant Agreement, the consortium has an obligation to:

- disseminate the results of the project (which are not protected);
- give open access to science publications by depositing them in a repository;
- provide open access to research data underlying publications by including them in a repository for scientific data (see AMECRYS Data Management Plan 2017);
- include the EU emblem and project funding text on all dissemination activity.

The dissemination of results to the Project Participants, the Scientific Community, Academia, and to related industry will be achieved by a combination of internal meetings, deliverables publication in Project website, presentations at relevant conferences and symposia, and by publishing results in high-impact factor peer-reviewed journals. All scientific publications will be provided as free on-line open access (green/gold model). Generated data will be preserved on intranet platform until the end of the Project and then stored in the electronic archives of Zenodo for at least 5 years after the conclusion of the Project without additional cost. The Management

of Knowledge and Intellectual Property will be in the charge of the Steering Committee in accordance with the terms of the Consortium Agreement. [see Exploitation Section 8 below]

7.2 Dissemination target Groups

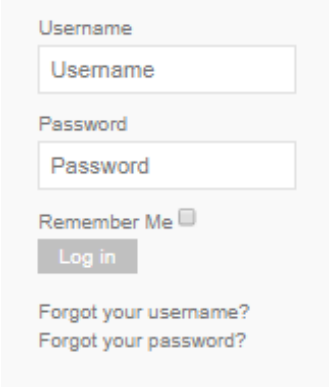
The following 4 main groups of stakeholders are likely to be interested by the project outputs, and therefore targeted by the consortium for dissemination activities:

- Project Participants
- Scientific Community
- Related Industry
- Regulatory Specialists

7.3 Dissemination Channels and achievements in first 12 months

7.3.1 Project Website

An interactive **Project website** was developed by CNR by M2 www.amecrys-project.eu/. It provides a **restricted area (intranet)** to access deliverables and documents by Partners, and an open access area informing initially about the scope and objectives of the Project, and progressively with interim results and news.



All consortium members were provided with login details for the restricted area of the web-site. This restricted area of the web-site includes presentations at the meetings; non-public deliverables; reference documents such as grant and consortium agreements and templates for reporting. The usage log of consortium members was not available in the first 12 months, but has been activated from September 2017.

7.3.2 Project Meetings and Workshops

Three different types of internal project meetings and workshops, which will be arranged over the lifetime of the project:

- Internal Project meetings
- Project Workshops
- Final Project workshop

Five **Internal Project meetings** were planned over the course of the project in M1 (October 2016), M7 (April 2017), M19 (April 2018), M25 (November 2018) and M39 (December 2019), these meetings are for the consortium members only and all partners will attend these meetings.

In the first 12 months, the project met in M1 for the Kick-off meeting from the 5-7 October 2016 in Institute on Membrane Technology (CNR-ITM), at University of Calabria Campus, Rende, Italy; 30 consortium participants attended. The first progress meeting took place slightly earlier than planned on 7 March 2017 (M6) in Imperial College London; 19 consortium participants attended. In addition, a number of "bilateral meetings" among partners and several others by web telephone conference took place. The next progress meeting in M19 (April 2018) will take place in Bordeaux at CNRS (this has still to be confirmed at the meeting of 20-21 September 2017).

Project Workshops are planned for M12 (September 2017) and M30 (April 2019), these meetings are for the consortium members only and all partners will attend these meetings.

A progress meeting by skype for all partners is going to be held on 20-21 September 2017 (M12). In addition, three review meetings with the European Commission will take place after the end of each reporting period. They will be on 14 November 2017 (M14), after M30 and the final meeting at the end of the project M48.

The **Final Project Workshop** will take place at the end of the project around M48 (September 2020) this event will disseminate project results and over 100 key industrial and academic researchers will be invited to attend. It will be held at CPI in the UK. It is meant as an open, final, project meeting.

7.3.3 Presentations at Scientific Meetings & Exhibition Events

From M6 (March 2017) onwards the consortium will start to **present at scientific meetings and conferences** including but not limited to Euromembrane/ICOM/ISIC/BIWIC/Antibody & Protein Therapeutics Conference/BioProcess Int. Conference & Exhibition/ACHEMA. This will reach a wide audience in the Scientific Community, Academia and Related Industries. The target for the network lifetime is 40 presentations reaching over 200 participants per conference, on average.

Up until M12 (September 2017), the consortium partners have presented at 12 scientific meetings and workshops (see Section 7.4 for the full list) and reached over 2500 participants.

Partners plan to present at the following future conferences and scientific presentations:

- **CNR** are presenting at the Annual meeting of the Department of Chemical Sciences and Materials' Technologies (DSCTM) of CNR, 19-20 October 2017 in Alghero. The presentation is entitled "Sustainable preparation of highly hydrophobic PVDF membranes using green solvent and the combination of VIPS and NIPS techniques". An abstract is being submitted to Polymers 2018—PDFA: Polymers, Design, Function and Application, Barcelona, Spain, 21–23 March 2018 entitled "Sustainable preparation of PVDF-based membranes with tailored properties". Expected number of participants >>200. 1-2 abstracts will also be submitted to Euromembranes 2018 Conference.
- **IMP** are submitting an abstract to the ABC2 conference in Lisbon, Portugal, 2-4 November 2017 entitled "Seeding and Continuous Protein Crystallisation for Bioseparation".
- **UCAL** plan to present at the Euromembranes 2018 Conference and at least other 2-3 presentations at Scientific Workshops / Conferences over the course of the project.
- **CNRS** plan to participate in the AIChE meeting and GDR Microfluidics/Nanofluidics 2018 (French network around microfluidic tools).
- **ULB** will attend one or two meetings in each of the coming years.
- **UST** plan to present at two conference in 2018 - BIWIC in September 2018 and BACG in June 2018). Each following year they plan to present at least at 1 international conference.
- **FDB** will be presenting some work concerning High-Throughput Robotics at a Protein Chromatography Users group UCL on 26th October 2017 (~40 participants) at which will include some of the screening work we did on the Hel4 purification. They hope to present similar data to a wider international audience within the next 12 months.

7.3.4 Publications in International Peer Review Journals

From M6 (March 2017) onwards the consortium will start to **submit articles with initial results in International Peer Review Journals** including but not limited to J. Membr. Sci./Cryst. Growth Des./Adv. Mater./Nature Mater./Chem. Mater./Nature Chem./Biotech. Bioeng./J. Biotechnol. This will target the Scientific Community, aiming for over 30 paper with a journal impact factor >4 and a total number of citations per paper >25 in 4 years after publication. All scientific publications will be provided as free on-line open access (green/ gold model).

Up until M12 (September 2017), two manuscripts have been prepared to be submitted for publication in scientific journals:

- **CNR** submitted a manuscript to "Green Chemistry" (RSC) with an impact factor of 9.125. The consortium will opt to pay for a gold open access to comply with GA article 29 (the journal is yellow access).
- **ULB** have submitted the manuscript "Solute particle near a nanopore: influence of size and surface properties on the solvent-mediated forces" by Julien Lam and James F. Lutsko to "Nanoscale (RSC)" with an impact factor of 7.78. The paper is currently under revision. The consortium will opt to pay for a gold open access to comply with GA article 29 (the journal is yellow access).

Other partners plan to submit to the following journals:

- **CNRS** will submit to the following journals depending on success of results - Lab On a Chip, AIChE, Journal of Crystal Growth, or Journal of Membrane Science.
- **UCAL** plan to submit an abstract in 2017 to Journal of Membrane Science (if 5.557) or other journal with a similar impact factor and with a gold open access. In addition, other publications in international journals are reasonably expected.
- **ULB** will submit a manuscript "Controlling nanocrystal polymorphism by means of droplet heterogeneous nucleation" by Julien Lam and James F. Lutsko to J. American Chemical Society (if 13.9).
- **UST** will submit a journal article to Crystal Growth Design in October 2018 (if 4.055).

	Tool	Item	Target audience	Timing	Impact	Progress
Dissemination activities	Project website	Deliverables	Consortium/scientific Community	Deliverables timing	Usage logs >100/month	Ongoing
	Project meetings & workshops	Internal Project meetings	Consortium	M1/M7/M19/ M25/M39	All Partners participate	M1 and M7 complete
		Project workshops	Consortium	M12/M30/	All Partners participate	M12 scheduled
		Final Project workshop	Scientific Community	M48	>100 participants	Planned
	Presentations at scientific meetings & exhibition events	Euromembrane/ICOM/ ISIC/BIWIC/Antibody & Protein Therapeutics Conference/BioProcess Int. Conference & Exhibition/ACHEMA etc.	Scientific Community/Stakeholders/CMOs/Regulatory specialists/Biopharma Companies/Other Projects	>M6	>40 presentations; >200 participants	12 presentations reaching approx. 2500 participants
	Publications in international peer-reviewed journals	J. Membr. Sci./Cryst. Growth Des./Adv. Mater./Nature Mater./Chem. Mater./Nature Chem./Biotech. Bioeng./J. Biotechnol. etc.	Scientific Community	>M6	>30 papers; journ. i.f. >4; total citations/paper >25 in 4 yrs	2 manuscripts prepared for submission

7.4 Table of Presentations at Scientific Meetings & Exhibition Events
[update 22 September 2017]

Partner(s) involved	Type	Contribute title	Conference name/Journal title	Conference date&place	Participant reach (no attendees)
CNR	Presentations at Scientific Meetings & Exhibition Events	Sustainable preparation of highly hydrophobic PVDF membranes using green solvent and the combination of VIPS and NIPS techniques	Annual meeting of the Department of Chemical Sciences and Materials' Technologies (DSCTM) of CNR. http://www.dsctm.cnr.it/it/conferenza-di-dipartimento-2017.html	19-20 October, 2017, Alghero	Approx. 50 participants
FDB	Presentations at Scientific Meetings & Exhibition Events	Challenges with E. coli outer membrane for periplasmic release	CBMNET Membrane Engineering of Lipids and Proteins for Industrial Biotechnology and Bioenergy http://cbmnetnibb.group.shef.ac.uk/events/cbmnet-membrane-engineering-of-lipids-and-proteins-for-industrial-biotechnology-and-bioenergy/	5 – 6 June, 2017, Glasgow	40 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	Template Assisted and Continuous Crystallisation: Control of Polymorphs, Protein Crystallisation and Bioseparation	ICCEIB 2016 in Melaka, Malaysia http://icceib.ump.edu.my/index.php/en/about-us/client-s-charter-2/history-2016	28 - 30 November, 2016, Melaka, Malaysia	Approx. 200 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	Template Assisted and Continuous Crystallisation: Control of Polymorphs, Protein Crystallisation and Bioseparation	Departmental Seminar, University of Surrey, March 2017	15 March, 2017, Guilford	Approx. 40 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	Attendee	CMAC Open Day, 2017 https://www.cmac.ac.uk/CMAC_Open_Day_2017.htm	23 - 24 March, 2017, Glasgow	250 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	Polymorphic Control of Carbamazepine using Capillary Tubes	UK Particle Technology Forum, March 2017 http://www.icheme.org/communities/special-interest-groups/Particle%20Technology/Events/2017/particle-technology-forum-29mar.aspx#.WcTjgrKGOpo	29 March, 2017, Birmingham	Approx. 200 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	The Effects of Flow and Seeding on the Crystallisation of Immunoglobulin G	ACS BIOT Meeting http://www.acsbiot.org/index.php/meetings/2017-meetings/	2 - 6 April 2017, San Francisco	Approx. 200 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	Template Assisted and Continuous Crystallisation: Control of Polymorphs, Protein Crystallisation and Bioseparation	ACS BIOT Meeting http://www.acsbiot.org/index.php/meetings/2017-meetings/	2 - 6 April 2017, San Francisco	Approx. 200 participants
IMP	Presentations at Scientific Meetings & Exhibition Events	J. Y.Y. Heng Organizer and Session Chair	EPSRC Directed Assembly Network Workshop (organizer and session chair)	27 June, 2017, London	Approx. 200 participants

ULB	Presentations at Scientific Meetings & Exhibition Events	Depletion forces acting on a solute particle near a cylindrical pore	Thermodynamics 2017 http://thermodynamics2017.efconference.co.uk/	5-8 September 2017, Edinburgh	180 participants, 70 talks, 90 posters
ULB	Presentations at Scientific Meetings & Exhibition Events	Controlling nanocrystal polymorphism by means of droplet heterogeneous nucleation	Thermodynamics 2017 http://thermodynamics2017.efconference.co.uk/	5-8 September 2017, Edinburgh	180 participants, 70 talks, 90 posters
UST	Poster Presentations at Scientific Meetings & Exhibition Events	Effect of Template Particles on Protein Nucleation Rates from Probability Distributions of Induction Times	British Association of Crystal Growth 2017 (BACG 2017) http://www.bacg-2017.co.uk/home	17-30 June, 2017, Manchester, UK	300 participants
UST	Poster Presentations at Scientific Meetings & Exhibition Events	Effect of Templates on Protein Nucleation Rates from Probability Distributions of Induction Times	20th International Symposium on Industrial Crystallization (ISIC 20) http://isic20.com/	3-6 September, 2017, Dublin, Ireland	300 participants

8 AMECRYS Exploitation Plan

Under **Article 28** of the Grant Agreement, the consortium must take measures to exploit results up to four years after the end of the project. The Management of Knowledge and Intellectual Property will be in the charge of the Steering Committee in accordance with the terms of the Consortium Agreement.

Some of the major aspects covered by this plan include:

i) **Confidentiality [GA Article 36]**: each Partner will treat information as confidential and not disclose it to third parties;

ii) **Ownership of knowledge [Article 26]**: knowledge is owned by the Partners who carried out the work generating the knowledge;

iii) **Patent [Article 31.3]:** Partners who own key knowledge suitable for patent may at their own expenses make applications for patents and shall keep informed the Consortium;

iv) **Access rights [GA Article 25, 31]:** Access to know-how previously developed by members of the Consortium (background) and to new knowledge, methodologies, materials and technology developed in the project (foreground) is royalty-free for all Partners for implementing the project. PE and record of undertaken exploitation activities will be included in periodic and final reports (D1.1).

The GA is available in the members are of the AMECRYS web-site http://www.amecrys-project.eu/ [login is required].

8.1 Intellectual Property Rights

The IPR management strategy is strictly governed by the Consortium Agreement (CA), which includes all provisions related to the management of IPR including ownership, protection and publication of knowledge, access rights to knowledge and pre-existing know-how as well as questions of confidentiality, liability and dispute settlement. In the CA the Partners have identified the background knowledge included and excluded.

The CA regulates the ownership of results (Section 8 of the CA). The knowledge acquired in the course of the project shall be considered as a property of the partner generating it, and in this sense the originator is entitled to use and to license such right without any financial compensation to the other contributors.

CA also regulates the transfer of results ownership (Section 8.2 of the CA). Each Signatory Party may transfer ownership of its own Foreground following the procedures of the Grant Agreement Article 30.

The IPR management strategy focuses on rapid dissemination and exploitation to maximise the potential for benefit realisation to all stakeholders. AMECRYS is based on open source as much as possible. The Parties have agreed to distribute the data resulting from the Project, this is outlined in the AMECRYS Data Management Plan and the data can be found in Zenodo https://zenodo.org/communities/amecrys-project-eu

8.2 Exploitation Strategy – Technology Roadmap

At present, plans for exploitation are very much dependent upon the results obtained. Any results which are realised will be exploited in particular through transfer or licensing; see GA Article 30) by using them in further research activities (outside the action).

An overall assessment of AMECRYS results will take place in M48 (September 2020), including the potential of innovative membrane-crystallization technology to implement a strategy of continuous manufacturing, future perspectives and impact within DSP in pharmaceutical industries, targets and timetables for bringing the technology to the market, will be defined in a **Technology Roadmap** (Work Task 7.3) by Consortium Partner, FDB.

9 Conclusion

The Communication, Dissemination and exploitation plan is the key tool, which we will use for communication, dissemination and exploitation of the project and project results. This plan presents dissemination and communication tools for particular targeted audiences and a draft of the exploitation plan. It is a living document, which will be continually monitored, updated and reported during the project.

10 References and Useful Links

AMECRYS Consortium Agreement, 2016

AMECRYS Data Management Plan 2017

AMECRYS Grant Agreement Number 712965 – European Commission 2016

Dissemination and Exploitation in Horizon 2020 Slides from EU Coordinators Day 2017 http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/8_result-dissemination-exploitation.pdf

European commission, Communicating EU research (2008) http://ec.europa.eu/research/science-society/science-communication/pdf/communicating-eu-research.pdf

European Commission, Frequently Asked Questions https://ec.europa.eu/research/participants/portal/desktop/en/support/faqs/faq-933.html

European Commission, Reference terms http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html

European IPR Helpdesk: http://www.iprhelpdesk.eu

European IPR Helpdesk, Fact Sheet: The Plan for the Exploitation and Dissemination of Results in Horizon 2020, July 2015. https://www.iprhelpdesk.eu/sites/default/files/newsdocuments/FS-Plan-for-the-exploitation-and-dissemination-of-results_1.pdf

Research Participant Portal – H2020 Documents: http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html

Appendix A – Gantt Chart: timing of work packages

Tasks	Month 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP1 Project Coordination & Management																																																	
T1.1 - Project Coordination												D1.5		D1.4																D1.10		D1.9																		D1.13 D1.14
T1.2 - Overall strategic guidance & Project meetings	D1.1						D1.2					D1.3							D1.6						D1.7				D1.8									D1.11										D1.12
WP2 Production of mAb/domain & Nanotemplates synthesis																																																
T2.1 - Production of mAbs																		D2.2																																
T2.2 - 3D-Nanotemplates preparation & optimization												D2.1						M1						D2.3																									
WP3 Membranes development																																																
T3.1 - Membranes preparation & optimization																		M2						D3.2																									
T3.2 - Membranes production at industrial scale												D3.1																							D3.3 M6													
WP4 Microfluidics for continuous mAbs crystallization																																																
T4.1 - Design, manufacturing & optimization of the microfluidic device												D4.1																		D4.2 M3																			
T4.2 - Fundamental knowledge on selective mAbs crystallization in microfluidics																																			D4.3													
WP5 Multi-scale modelling & characterization of mAb crystals																																																
T5.1 - Development of coarse-grained models for mAbs												D5.1												D5.2 M5																									
T5.2 - Simulation, multi-scale modelling & scale-up																																			D5.3													
T5.3 - Structural, morphological & biological characterization of crystals																																			M4												D5.4
WP6 Prototype design, construction & operation																																																
T6.1 - Prototype design, construction, installation, QS-GMP compliance																														D6.1										D6.2 M7									
T6.2 - Process monitoring & compliance with CQA in mAbs processing																																															D6.3
T6.3 - Techno-economic evaluation																																															D6.4
WP7 Communication, dissemination & exploitation activities																																															
T7.1 - Communication & dissemination activities plan execution		D7.1																						D7.4																								
T7.2 - Preparing & implementing the "Plan for Exploitation of Foreground"						D7.2						D7.3																																			D7.5
T7.3 - Technology roadmap																																															D7.6 M8
	Reporting Period 1												Reporting Period 2																		Reporting Period 3																		