



PROGENY

Proto-Opto-Electro-Mechanical Hybrid Systems
for Generation-Next Bionic Devices

D6.2

Dissemination, Exploitation, & Communications Plan

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Acronym: PROGENY

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List of Beneficiaries

No	Name	Short name	Country	Project entry month ⁸	Project exit month
1	TECHNISCHE UNIVERSITAET DRESDEN	TUD	Germany	1	42
2	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	CNRS	France	1	42
3	UNIVERSITAET BREMEN	UBremen	Germany	1	42
4	CHALMERS TEKNISKA HOEGSKOLA AB	UCHAL	Sweden	1	42
5	INSTITUTUL NATIONAL DE CERCETARE DEZVOLTARE PENTRU ECOLOGIE INDUSTRIALA	ECOIND	Romania	1	42
6	UNIVERSITEIT LEIDEN	ULEI	Netherlands	1	42
7	UASABI INOVEYSHANS	WI	Bulgaria	1	42

DISSEMINATION, EXPLOITATION, & COMMUNICATION PLAN

PUBLIC

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EXECUTIVE SUMMARY

The deliverable **D6.2** report on Dissemination, Exploitation & Communications Plan (DEC Plan) of the H2020 FET-Open project PROGENY (GA 899205) is reported here as part of **WP6** - Dissemination and Communication work package. PROGENY DEC actions aim at communicating project results to key scientific, industrial and socio-political stakeholders, and to the general public, fostering the adoption of the new technology and its impact. This DEC plan is an elaboration of the draft provided with the PROGENY DOA part B section 2.2-A. The execution of this plan will be continually monitored, and the plan will be updated two more times and reported during the project making it a living document. This report details activity in reporting period **RP1**. A second update for **RP2** is planned on **M18**, and a final updated report will be delivered on **M36**.

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1. INTRODUCTION

The overall objective of PROGENY is to develop foundational innovation principles and designs for radically new Proto-Opto-Electro-Mechanical Systems (POEMS) for device & sensor technology, using designer soap films. Implementation of such a revolutionary idea requires a combination of excellent research and innovation bridged efficiently to strategic stakeholders. Our Dissemination and Exploitation Plan (D&E Plan) has been designed to achieve a support ecosystem for the pilot and tech transfer phases, by the end of our 42-months project. The present document reports dissemination and exploitation plans in detail, listing the foreseen activities highlighted for the first reporting period (M1-M12). Unfortunately, due to the pandemic situation our initial plan was severely curtailed and we hope to implement a full plan during the second reporting period. The Project Coordinator is responsible for ensuring that the different activities described herein are performed within the consortium.

2. GOALS AND OBJECTIVES

2.1 Dissemination Goals

PROGENY has three dissemination phases:

Dissemination at the *first phase* involves awareness on the project objectives and expected results addressed to EU funded projects on novel (organic, printable, quantum etc.) electronics to peer groups at universities and research institutes and to members of the PROGENY External Advisory Board (EAB). The goal is to build up a project identity and establish working relations with stakeholders and related initiatives.

The *second phase* is on capacity building targeting key actors who can benefit from PROGENY deliverables.

This phase has two dissemination requirements:

- (i) to disseminate open accessed knowledge identified and/or developed within the project, and
- (ii) to empower stakeholder groups to secure the critical mass for the establishment of a meaningful system of co-creation in the field of sustainable devices and sensors technology.

The *third phase* involves exploitation actions of the project. In this phase IPR foundations needs to be established and the key stakeholders need to be equipped with the right skills, knowledge and understanding of PROGENY results in order to achieve targeted scientific, societal, economic, and environmental impact.

2.2 Objectives

The table below indicates specific objectives in relation to the above-mentioned goals.

Awareness	<ul style="list-style-type: none"> • Consolidate inter consortium team building and develop robust management structure • Develop a network of stakeholders within each country represented by Partners • Participate in all major events related to organic/sustainable electronics • Disseminate nationally and internationally the knowledge and approaches developed • Networking with relevant projects, initiatives and networks encouraging cross fertilization of ideas.
Capacity Building	<ul style="list-style-type: none"> • Organize and attend workshops, summer schools • Engage with EAB member organizations and EC consultation services to get support • Valorize the developed technology according to existing plan.
Exploitation	<ul style="list-style-type: none"> • Communicate the results of the capacity building process • Generate and manage IPR • Develop business plan, and start-up company for exploitation in phase II and III

3. DISSEMINATION ACTIONS

Our dissemination actions aim to establish critical mass and commitment from strategic stakeholders through a lean and efficient plan. Due to the highly interdisciplinary nature of the project, PROGENY deliverables will be disseminated to diverse communities through strategic channels. Our External Advisory Board (EAB) featuring stakeholders from scientific community, and EU policy experts, will be a key channel for providing guidance to networking activities.

Following are the planned actions in detail:

3.1 Dissemination to Scientific Community: Interdisciplinary results will be communicated to diverse peer groups. Leadership of project partners in national and international platforms is already established and will facilitate networking and community building. Furthermore, our external advisors are pioneering leaders in their respective fields of science and technology.

3.1.1 Scientific Publications: We will prioritize Gold or Green (with 6 months embargo) open access publications. At least 12 publications are estimated over the project period, in journals with the highest impact in multidisciplinary science, materials sciences, nanotechnology, surface sciences, microfluidics, device technology, and in chemistry.

KPI (Key Performance Indicator): Impact factor of accepted journals, citations, author h-index.

Preliminary list of potential journals for scientific publications:

Science, Nature, Nature Materials, Nature Photonics, Nature Nanotechnology, Advanced Materials, Journal of the American Chemical Society, Angewandte Chemie, ACS Nano, Surface Science Reports, Langmuir.

Preliminary list of potential titles for publication:

1. Effects of molecular length and curvature on charge redistributions upon photo-excitation of 1D electronic surfactants.
2. Inter- and intra-molecule charge transfer in the building units for 2D electronic surfactants.
3. Electronic soap molecules: Synthesis and characterization
4. 2D electronic polymers with surfactant properties
5. Electronic soap films
6. R&D platforms for study of soap films
7. Charge transport in designer soap films
8. Gas transport through designer soap film membranes
9. Living Electronic soap films: A hammock for microbes.
10. Quorum sensing within soap films
11. Ex-ante life cycle and risk assessment of future technology: A case study on soap films.
12. White Paper: Proto-Opto-Electro-Mechanical Systems (POEMS) – possibilities in sustainable device engineering.

Publications will be available for downloading from project website (www.progeny-project.eu), and associated data will be deposited in ZENODO, as described in the Data Management Plan (DMP)*.

Open Access cost sharing plan: The Corresponding Authors' institutes will share the open access cost according to a mutual agreement decided before manuscript preparation.

3.1.2 *DMP summary: PROGENY will provide open access to raw data corresponding to modelling & simulation, as well as data required to reproduce the results presented in scientific publications. These data will be stored in ZENODO (a research data repository created by CERN) ensuring their public availability and long-time preservation. Details will be provided in the first update of the DMP, to be delivered by **M6** and updated periodically (**M18**, **M36**). Main modelling results will be disseminated through the European Materials Modelling Council ensuring wide research visibility.

3.1.3 Course material: Our IPR protected findings, concept designs and selected experimental results will be included as graduate level course material at partner Universities. Course update plans will be included as chapters in final two project periodic reports.

3.1.4 Training, and Dissertations: Intersectoral outcomes from PROGENY training experience will prepare excellent early-stage European researchers (Post Doc fellows) for ERC (and other career path) applications. Through PROGENY 6 post-doctoral positions and one SME internship has been co-funded so far. A number

of master's degree thesis is expected over the period of the project, supervised by Post-doctoral fellows.

3.1.5 Conferences & Workshops:

Note that due to the current pandemic our plans for conferences during 2021 has been disrupted.

Our partners at UBREM will present the electronic structures and photo-induced nonadiabatic dynamics in the building units for 1D and 2D electronic surfactants in following conferences/workshops:

1. 57th Symposium on Theoretical Chemistry, September 19-23th, 2021 Würzburg, Germany;
2. Virtual International Seminar on Theoretical Advancements (VISTA)- A biweekly seminar platform to facilitate interactions and scientific discussions of the International community at Covid-19 time and beyond.

Most of the consortium members plan to attend in person the MRS Fall meeting at Boston, Nov-Dec 2021.

PROGENY will be communicated at our partner ECOIND organized workshop at E-SIMI 2021, 24th INTERNATIONAL SYMPOSIUM "Environment and Industry", 24 SEPTEMBER 2021 in Bucharest.

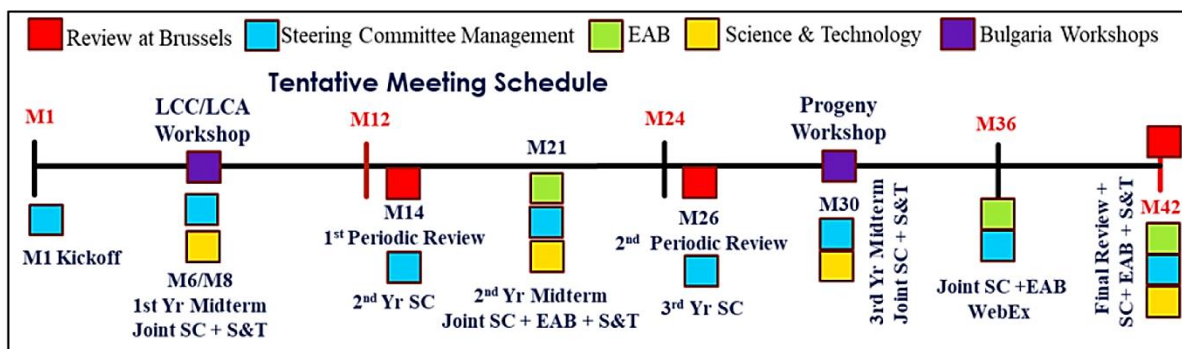
With support of **Sofia Tech Park, WI** will host a workshop (by **M30**) on molecular electronics with focus on **Soap Films** in Bulgaria (technologically underproductive European region), and a workshop by **M6** for partner training on **LCA/LCC**.

KPI: Attendance in BG Workshop, and attendee/student feedback.

Related EU projects will be monitored and contacted. Key representatives will be invited for lectures at the Bulgaria workshop. **PROGENY** will enhance networking possibilities with the following EU projects: **SoFia**, **Bio-wings** (FET Open), **HOT** (FET Proactive), and future related FET projects, and from **ERC Grantees** in Molecular Electronics and Surfactant Sciences.

KPI: New collaborations for Phase II, III and feedback from peers.

3.1.6 Project Meetings and Team building Exercises:



PROGENY Tentative meeting schedule

We will implement the highly interdisciplinary project through a set of scheduled two-day project meetings. We have planned two joint *Management & Scientific* meetings per year with all partner participation. Smaller team meetings are also planned at sidelines of conferences that partners attend and present jointly. Furthermore, the project PIs and researchers meet at a monthly basis through WP meetings hosted virtually. All meeting minutes with references are stored at an internal repository hosted by coordinator institute TUD. The PROGENY consortium members met for virtual project pre-Kickoff meetings on 8th and 9th of January 2019 and on 1st December 2020. A virtual kick-off meeting took place on 6th January 2021. Due to the pandemic our planned detailed kickoff has been moved to June 2021. Meanwhile we have a minimum of 4 WP meetings each month, and online mini workshops and meetings with advisors to keep the project on track.

3.2 Dissemination to Policy Makers and to the industrial sector

PROGENY will participate in relevant industrial fairs, for instance: **SSIS** (smart systems industry summit), **W3+FAIR**. For critical coverage of breakthrough results, we have identified policy journals: **ENDS Europe** and Brussels based **Politico** and **Euractiv**. To communicate with EU policymakers, the coordinator has already contacted **BRIEFING CSA**, a network matchmaking FET projects to businesses and investors. The project intern at Wasabi Innovations has participated in a communications training workshop hosted by the CSA. **PROGENY** will participate in European Research and Innovation Days including the Policy Conference and The Innovative Europe Hub at Brussels. Through our Start-Up company, IPR protected research findings will be communicated to investors who are interested in **commercial exploitation**. Jill Duggan, our policy advisor will be consulted to indicate policy hook for market uptake. EAB feedback will be critical in drafting our phase II proposal and a business plan. **IPR management and technology valorisation**- A Bulgarian National Patent by our start up **WI** has been published, aiming to protect our foundational concepts of electronic surfactant architecture on a soap film for use as a composite material in devices. Our IP management plan has been defined in the Consortium Agreement, which is based on the standard H2020 **DESCA** model. By **M34**, a basic patent landscape and IP plan will be prepared to guide **subsequent IP protection**. Based on bibliometric patent data, an overview of the trends in the innovation activities in AP will be used to deliver the strategic IP plan. We envision trademarks, copyrights and patents, protecting our commercial IPR and device designs on **POEMS** achieved during **PROGENY** and subsequent phases II and III. Our partner start-up **WI** will deliver a **techno-economic review** by **M34**. The report will target an article in Financial Times, results will be promoted to policy-makers in Brussels, and to technology investors (audience identification tools like influence map, tailored invitations, and social media engagement will be used). Initial deliverables will be the basis for an industry driven technology maturity project proposal (**PROGENY II**) and a basic **Business Plan** for exploitation by our start-up with support of our **EAB** by **M40**. This proposal and Business plan will be submitted for review to final **SC+EAB** meeting in **M42** and submitted to *EIC transition* and *Innovation Fund* calls among other opportunities. A white paper introducing demonstrator **POEMS** and roadmap for future tributary technologies, supported by IPRs, LCA, eco-toxicological study, will pave way for **PROGENY** Phase II.

KPI: Phase II Proposal accepted, Investments in Start-Up by **M42**.

4. COMMUNICATION TOOLS AND ACTIVITIES

Since we have all been a child, and excited about soap bubbles, we expect **PROGENY** Communication and outreach activities to be an enthusiastic exercise.

4.1 National level communications are being managed by Media Relation Units at partner institutes. All partners have communicated the project through their institutional webpages and communication will be supported at EU level by the FET-CSA communication hub <http://www.fetfx.eu/>. We have a set of a rollup banners, and communication templates, representing our project in all communication and outreach activities.

4.2 Project website & social media networking has been set up by **M1 (D6.1)** and will be updated monthly. Our logo, symbolically communicates the *pregnant* idea of *conceiving* a new generation of devices and sensors working on the interactive transport – A dance between a black wave-particle electron and the heavier orange proton. Our website will include media, news & events, project outcomes, links to partners' websites, publications, and search functionalities. The website features a researchers' blog where short stories and articles as a knowledge- sharing tool for partners and user communities. The website will also promote important (public) results from related projects. Twitter and LinkedIn will be used to promote the website content. An **impact assessment** of the entire social media communications activities will be carried out by **monitoring** web hits, likes, followers, retweets (KPI). Videos & news bytes will also be promoted through **YouTube** and **Hassim Al-Ghaili's** science communication website which has **>30M followers**. A Wikipedia page on **POEMS** with visualization platforms (such as JoVE) will be created, and will be updated with critical results.

4.3 Educational Communication: Press releases of selected publications will be sent to general scientific magazines: Chemistry World, C&EN, Research*EU Results, and Horizon: the EU RIA Magazine. Our educational videos will be shared to local schoolchildren (and teachers/parents) in local languages, through a team of established entertainers working with soap bubble-based science demonstrations & magic shows. We will involve a soap artist (engaging the fine arts community) working with ultra-large area soap film art installations crowd puller to our kiosk at Conferences and at **EU researchers' night**. PIs will apply for **TED talks** and in **Pint of Science** <https://pintofscience.com/>

4.4 Communication through Philanthropists: PROGENY will be registered at Prof. Bertrand Piccard's (EC supported) *Solar Impulse-World Alliance for Efficient Solutions* to be presented at the United Nations Environmental Conferences (COP) and at other preeminent international platforms.

4.5 Communication through Start-Up company: Our start-up company **WI** will participate in notable clean-tech entrepreneurship competitions for start-ups and communicate the project at investors' platforms. **WI** will opt for the Free Business Coaching provided for FET SME beneficiaries through the EIC.

5. EXPLOITATION ACTIONS

5.1 IPR Management

PROGENY deliverables are expected to generate significant intellectual property to be exploited by our start up. The PROGENY Steering Committee will monitor and identify any sensitive data worthy to being protected, and prepare appropriate IP protection. The IP management has been defined by the Consortium Agreement, which is based on the standard DESCAs model. The foundational BG national Patent application No 112996 dated 16.09.2019 (first filed before project GA/CA), Title of the application: САПУНЕН ФИЛМ (Soap Film), Applicant: Усаби Иновейшънс ООД (Wasabi Innovations), has been accepted and published. By M30 a basic patent landscape and IP plan will be prepared to guide subsequent IP protection. Based on bibliometric patent data, an overview of the trends in the innovation activities in AP will be used to deliver the strategic IP plan.

5.2 Technology Valorization

POLITO Business Management department in association with our partner SMEs will deliver a techno-economic report by M46. The report will target an article in the Financial Times or similar publication and results will be promoted to Energy policy-makers in Brussels and to sustainable/solar energy investors (audience identification tools like an influence map, tailored invitations, and social media engagement will be used). The reports will be the basis for an industry driven technology maturity project proposal (PROGENY II) and a basic Business Plan for exploitation by our SME partners and start-up WI, with support of our EAB members, in the subsequent project phases (II and III). This proposal and the basic Business plan will be submitted for review to final SC+EAB meeting in M48 and submitted to targeted RIA calls. WI will receive free business consultation through EC instruments.

KPI: Proposal accepted, investments.

5.3 Knowledge Management and Protection Strategy

The process of effectively using organizational knowledge will be defined according to the protocols imposed by the pilot on Open Research Data. The project's password protected intranet linked with a repository maintained at TUD server will be the main instrument for information sharing and knowledge management. The PROGENY intranet is password protected and only the partners participating in this project have access to it. The intranet will contain all the information and documents generated as a result of this action as illustrated below. The consortium members will be notified by e-mail when an important document is uploaded in the intranet.

6. INFORMATION ON EU FUNDING

Unless the Commission requests or agrees otherwise, or unless it is impossible, any dissemination of results (in any form, including electronic) must: (a) display the EU emblem and (b) include the following text: “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 899205”. When displayed together with another logo, the EU emblem must have appropriate prominence. Applications for protection of results (including patent applications) filed by or on behalf of a beneficiary must — unless the Commission requests or agrees otherwise or unless it is impossible — include the following: “The project leading to this application has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 899205”. In addition to the funding acknowledgement all reports and publications shall include the following disclaimer: “The content of this [report/study/article/publication...] does not reflect the official opinion of the European Commission. Responsibility for the information and views expressed therein lies entirely with the authors.”