
Approved Project plan for the CEN Workshop on "Sustainable Nanomanufacturing Framework"

**Requests to participate in the Workshop
are to be submitted
to fmachicado@une.org ¹**

Recipients of this project plan are kindly requested to name all patent rights known to them to be relevant to the Workshop and to make available all supporting documents.

Madrid, 2022-07-04 (Version 9)

¹ Applications for participating in the Workshop and comments on the project plan that are not received by the deadline do not need to be taken into consideration. Once constituted, the Workshop will decide whether or not to consider the comments received in good time.

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Summary

There is a need of defining the conditions to ensure the environmental, social and economic sustainability of the nanomanufacturing ecosystem.

The OASIS OITB R&I project, funded by H2020 EC funds, has produced a deliverable defining a Sustainable Nanomanufacturing Framework, which will be the basis of this Workshop. It has already been tested in real nanomanufacturing, as it was the tool used by the OASIS project to perform an initial diagnosis of its Pilot Lines and define its improvement plans. It will also be the tool to assess its sustainability and evolution at the end of the project.

European manufacturing is determined to provide by 2030 a robust foundation for the economic, social and ecologically sustainable development of the European Union, which will contribute to increasing sustainability in a global context.

The sustainable manufacturing of nanotechnology supports the needs of the industry and the industrial policies of the EU and promotes the technological leadership of Europe. At the same time, it minimizes negative environmental impacts, conserves energy and natural resources, is safe for employees, communities, and consumers, and is economically sound.

There are several standardization documents at European and International level regarding nanomanufacturing and sustainability, but none relating both fields and defining a specific framework for sustainable nanomanufacturing.

1 Status of the project plan

Draft project plan for public commenting (Version 1.0)

This draft project plan is intended to inform the public of a new Workshop. Any interested party can take part in this Workshop and/or comment on this draft project plan. Please send any requests to participate or comments by e-mail to fmachicado@une.org.

All those who have applied for participation or have commented on the project plan by the deadline have been invited to the kick-off meeting of the Workshop on 2022-01-12.

2 Workshop proposer and Workshop participants

2.1 Workshop proposer

Person or organisation	Short description and interest in the subject
<p>Jesús M^a López de Ipiña.</p> <p>Fundación Tecnalia Research & Innovation</p>	<p>Jesús M^a López de Ipiña is an industrial engineer, MSc. in environmental technologies and OHS by the University of the Basque Country. He is a Project Manager in the TECNALIA Industry and Transport Division. Since 2008, a significant part of its research activity focuses on nanosafety.</p> <p>He has participated in several FP7 projects (IntegRisk, i-Protect, Safe@Sea, Nanex, nanoStair, Polyfire) and was the project coordinator of Scaffold. Currently he is participating in several H2020 projects, such as Platform, Fast, Vulkano, EC4SafeNano and OASIS, focusing his research on the safe design (SbD) and smartization of nano-manufacturing processes.</p> <p>He is a member of CEN TC 352/WG3 and Chairperson of the Spanish Technical Committee for standardization of nanotechnologies (CTN GET15 of UNE), and actively participates in the European Technology Platform on Industrial Safety and the Spanish mirror, as well as in EU-Nanosafety cluster.</p> <p>Fundación Tecnalia Research & Innovation is a leading Research and Technological Development Centre in Europe, whose mission is to transform technology into GDP to improve people's quality of life, by creating business opportunities for companies, being member of BRTA (Basque Research and Technology Alliance). They work with an increasingly strategic business relationship model based on trust, collaboration, and a shared technological approach, whereby their main scopes of action are: advanced manufacturing, digital transformation, energy transition, sustainable mobility, health, and the urban ecosystem. Tecnalia is the first private Spanish organisation in contracting, participation, and leadership in the European Commission's Horizon 2020 programme and they are ranked third in European patent applications.</p>

2.2 Other potential participants

This CWA will be developed in a Workshop (temporary body) that is open to any interested party. The participation of other experts would be helpful and is desired. It is recommended that:

- manufacturers of nano-technologies
- research institutes for nano-technologies
- related standardisation Technical Committees
- research and innovation projects on nano-technologies

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The following persons or organisations already signed up to the kick-off meeting prior to the publication of the draft project plan.

Person	Organisation
Workshop proposer: Jesús M ^a López de Ipiña	Workshop proposer: Fundación Tecnalia Research & Innovation
Simon Clavaguera	Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Joséphine Steck	Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Cécile Girardot	Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Paul Gomendiourrutia	Sisteplant
Maudez Le Dantec	Technical Center Industriel De La Plasturgie Et Des Composites, IPC
Benedikt Schug	Fraunhofer-Gesellschaft
Amaya Romero Izquierdo	University of Castilla-La Mancha, UCLM
Leticia Toledo	University of Castilla-La Mancha, UCLM
Rafael Orlando Klee Morán	University of Castilla-La Mancha, UCLM
María Luz Sánchez	University of Castilla-La Mancha, UCLM
Stavros Tsantzalis	University of Patras, UPAT
Nils Kaiser	Alfred Wegener Institut Helmholtz-Zentrum für Polar und Meeresforschung, AWI
Grigorios Koutsoukis	Adamant Composites
Despoina Batsouli	Adamant Composites
Antonios Vavouliotis	Adamant Composites
Paweł Durałek	TMBK Partners Spółka
Przemysław Kośmider	TMBK Partners Spółka
José Luis Viviente	Fundación Tecnalia Research & Innovation

Steffi Friedrichs	AcumenIST
Susanne Resch	BioNanoNet Forschungsgesellschaft mbH
Clemens Wolf	BioNanoNet Forschungsgesellschaft mbH
João Laranjeira	ISQ
Cristina Matos	ISQ
Georges Favre	Laboratoire National de Métrologie et d'Essais (LNE)
Raquel Martínez Egido	Asociación Española de Normalización, UNE
Workshop secretariat: Fernando Machicado Martín	Workshop secretariat: Asociación Española de Normalización, UNE

2.4 Registered Workshop participants

The following persons or organisations have registered as Workshop participants at the kick-off meeting and will actively participate in the development of the CWA.

Person	Organisation
Workshop proposer and Chairperson: Jesús M ^a López de Ipiña	Workshop proposer: Fundación Tecnalia Research & Innovation
Workshop Vice-Chairperson: Joséphine Steck	Workshop Vice-Chairperson: Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Simon Clavaguera	Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Cécile Girardot	Commissariat à l'énergie atomique et aux énergies alternatives, CEA
Paul Gomendiourrutia	Sisteplant
Maudez Le Dantec	Technical Center Industriel De La Plasturgie Et Des Composites, IPC
Benedikt Schug	Fraunhofer-Gesellschaft
María Luz Sánchez	University of Castilla-La Mancha, UCLM

Leticia Toledo	University of Castilla-La Mancha, UCLM
Rafael Orlando Klee Morán	University of Castilla-La Mancha, UCLM
Stavros Tsantzalís	University of Patras, UPAT
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Susanne Resch	BioNanoNet Forschungsgesellschaft mbH
Clemens Wolf	BioNanoNet Forschungsgesellschaft mbH
João Laranjeira	ISQ
Cristina Matos	ISQ
Georges Favre	Laboratoire National de Métrologie et d'Essais (LNE)
Athanasios Masouras	Pleinone Energy SA
Dorela Hoxha	Pleinone Energy SA
Raquel Martínez Egido	Asociación Española de Normalización, UNE
Workshop secretariat: Fernando Machicado Martín	Workshop secretariat: Asociación Española de Normalización, UNE

3 Workshop objectives and scope

3.1 Background

There is a need of defining the conditions to ensure the environmental, social and economic sustainability of the nanomanufacturing ecosystem.

The OASIS OITB R&I project, funded by H2020 EC funds, aims at fulfilling market potential of nano-enabled multifunctional lightweight composites, gathering manufacturing capacity of 12 Pilot Lines for the industrial production of nanomaterials. OASIS has produced a deliverable defining a Sustainable Nanomanufacturing Framework, which will be the basis of this Workshop. It has already been tested in real nanomanufacturing, as it was the tool used by the OASIS project to perform an initial diagnosis of its Pilot Lines and define its improvement plans. It will also be the tool to assess its sustainability and evolution at the end of the project.

European manufacturing is determined to provide by 2030 a robust foundation for the economic, social and ecologically sustainable development of the European Union, which will contribute to increasing sustainability in a global context.

The sustainable manufacturing of nanotechnology supports the needs of the industry and the industrial policies of the EU and promotes the technological leadership of Europe. At the same time, it minimizes negative environmental impacts, conserves energy and natural resources, is safe for employees, communities, and consumers, and is economically sound.

There are several standardization documents at European and International level regarding nanomanufacturing and sustainability, but none relating both fields and defining a specific framework for sustainable nanomanufacturing.

3.2 Scope

The scope of the present Workshop is the definition of a Sustainable Nanomanufacturing Framework (SNF) for sustainability management in nanomanufacturing processes. It sets up the basic requirements to assess the sustainability of a nanomanufacturing plant, allowing drafting improvement plans and monitoring the degree of progress of the nanomanufacturing plant.

The SNF model deploys the three traditional Sustainability Dimensions (SDs): social, environment and economy. Each SD is divided into several sustainability items (SIs).

The SNF allows the diagnose the starting position of a nanomanufacturing plant with respect to the SNF model, at two levels: 1) Sustainability management practices and 2) associate KPIs to measure results.

The result of the diagnose is used to elaborate the corresponding sustainability Improvement Plan for the nanomanufacturing plant.

The SNF is used to monitor the progress of sustainability in the PL through a customizable dashboard (two radar diagrams, Management and KPIs), which allows intuitive visualization of the starting values and the proposed improvement values (improvement baseline) for the period considered, as well as their evolution over time.

A draft will be submitted before the kick-off meeting.

The resulting CWA will be freely available at the website of CEN-CENELEC.

3.3 Related activities

The subject of the planned CWA is not at present the subject of a standard. However, there are committees, standards and/or other technical specifications that deal with related subjects and thus need to be taken into account - and involved, where necessary - during this Workshop:

- CEN/TC 352, Nanotechnologies
- CLC/SR 113, Nanotechnology standardization for electrical and electronics products and systems

The secretariat contacted CEN/TC 352 and CLC/SR 113 (2021-10-11 to 2021-11-07). It has been confirmed that they have no work item covering the scope of the planned CWA and that they do not have so far arguments against the topic of the planned CWA.

4 Workshop programme

4.1 General

The kick-off meeting took place on 2022-01-12. Due to the travel restrictions related to Covid-19, all meetings are intended to be made online. If a physical meeting is convened, the possibility of online participation will be granted, if possible.

A draft for public commenting will be published for 30 days.

A total of 3 Workshop meetings via web conference will be held, during which the content of the CWA will be presented, discussed and approved.

The CWA will be drawn up in **English** (language of meetings, minutes, etc.). The CWA will be written in **English**.

4.2 Workshop schedule

Table 1: Workshop schedule

CEN/CEN ELEC Workshop	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14
Calendar month	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	March 2022	Apr 2022	May 2022	June 2022	July 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022
Initiation	█													
1. Proposal form	█	█												
2. Project plan development		█												
3. Open commenting period on draft project plan			█	█										
Operation			█	█	█	█	█	█	█	█	█	█	█	█
4. Kick-off meeting				█										
5. Internal comments				█										
6. 2 nd meeting					█									
7. CWA development						█	█	█	█	█				
8. Internal comments								█	█					
9. CWA development									█	█	█	█		
10. Open commenting											█	█	█	
7. CWA(s) finalised and												█	█	

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GEN/CEN ELEC Workshop	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	M13	M14	
Calendar month	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	March 2022	Apr 2022	May 2022	June 2022	July 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022	
Publication															
8. CWA(s) publication															
Dissemination (see 7)															
Milestones				K + I D	V + I D C			I D C				D C	V	A	

- K** Kick-off
- V** Virtual Workshop meeting
- ID** Internal distribution of 1st draft
- IDC** Internal distribution of 2nd draft for comments (10 days)
- DC** Distribution of 3rd draft for comments (1 month)
- A** Adoption of CWA
- P** Publication of CWA
- D** Online distribution of CWA

5 Resource planning

The Workshop will be financed within the framework of the OASIS project.

The participation in the Workshop will not be conditioned to any fee.

All costs related to the participation of interested parties in the Workshop's activities have to be borne by themselves (e.g. travel and lodging, if relevant).

6 Workshop structure and rules of cooperation

6.1 Participation in the Workshop

The Workshop will be constituted during the course of the kick-off meeting. By approving this project plan, the interested parties declare their willingness to participate in the Workshop and will be formally named as Workshop participants, with the associated rights and duties. Participants at the kick-off meeting who do not approve the project plan are not given the status of a Workshop participant and are thus excluded from further decisions made during the kick-off meeting and from any other decisions regarding the Workshop.

As a rule, the request to participate in the Workshop is closed once it is constituted. The current Workshop participants shall decide whether any additional members will be accepted or not.

Any new participant in the Workshop at a later date is decided on by the participants making up the Workshop at that time. It is particularly important to consider these aspects:

- a. expansion would be conducive to shortening the duration of the Workshop or to avoiding or averting an impending delay in the planned duration of the Workshop;
- b. the expansion would not result in the Workshop taking longer to complete;
- c. the new Workshop participant would not address any new or complementary issues beyond the scope defined and approved in the project plan;
- d. the new Workshop participant would bring complementary expertise into the Workshop in order to incorporate the latest scientific findings and state-of-the-art knowledge;
- e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting concrete, not abstract, proposals and contributions;
- f. the new Workshop participant would ensure wider application of the CWA.

All Workshop participants who voted for the publication of the CWA or its draft will be named as authors in the European Foreword, including the organisations which they represent. All Workshop participants who voted against the publication of the CWA, or who have abstained, will not be named in the European Foreword.

6.2 Workshop responsibilities

The Workshop Chair is responsible for content management and any decision-making and voting procedures. The Workshop Chair is supported by the Workshop Vice-Chair and the responsible Workshop secretariat, whereby the Workshop secretariat will always remain neutral regarding the content of the CWA(s). Furthermore, the Workshop secretariat shall ensure that CEN-CENELEC's rules of procedure, rules of presentation, and the principles governing the publication of CWA(s) have been observed. Should a Workshop Chair no longer be able to carry out her/his duties, the Workshop secretariat shall initiate the election of a new Workshop Chair. The list below covers the main tasks of the Workshop Chair. It is not intended to be exhaustive.

- Content related contact point for the Workshop
- Presides at Workshop meetings
- Ensures that the development of the CWA respects the principles and content of the adopted project plan
- Manages the consensus building process, decides when the Workshop participants have reached agreement on the final CWA, on the basis of the comments received
- Ensures due information exchange with the Workshop secretariat
- Represents the Workshop and its results to exterior

The Workshop secretariat, provided by a CEN/CENELEC national member, is responsible for organising and leading the kick-off meeting, in consultation with the Workshop proposer. Further Workshop meetings and/or web conferences shall be organised by the Workshop secretariat in consultation with the Workshop Chair. The list below covers the main tasks of the Workshop secretariat. It is not intended to be exhaustive.

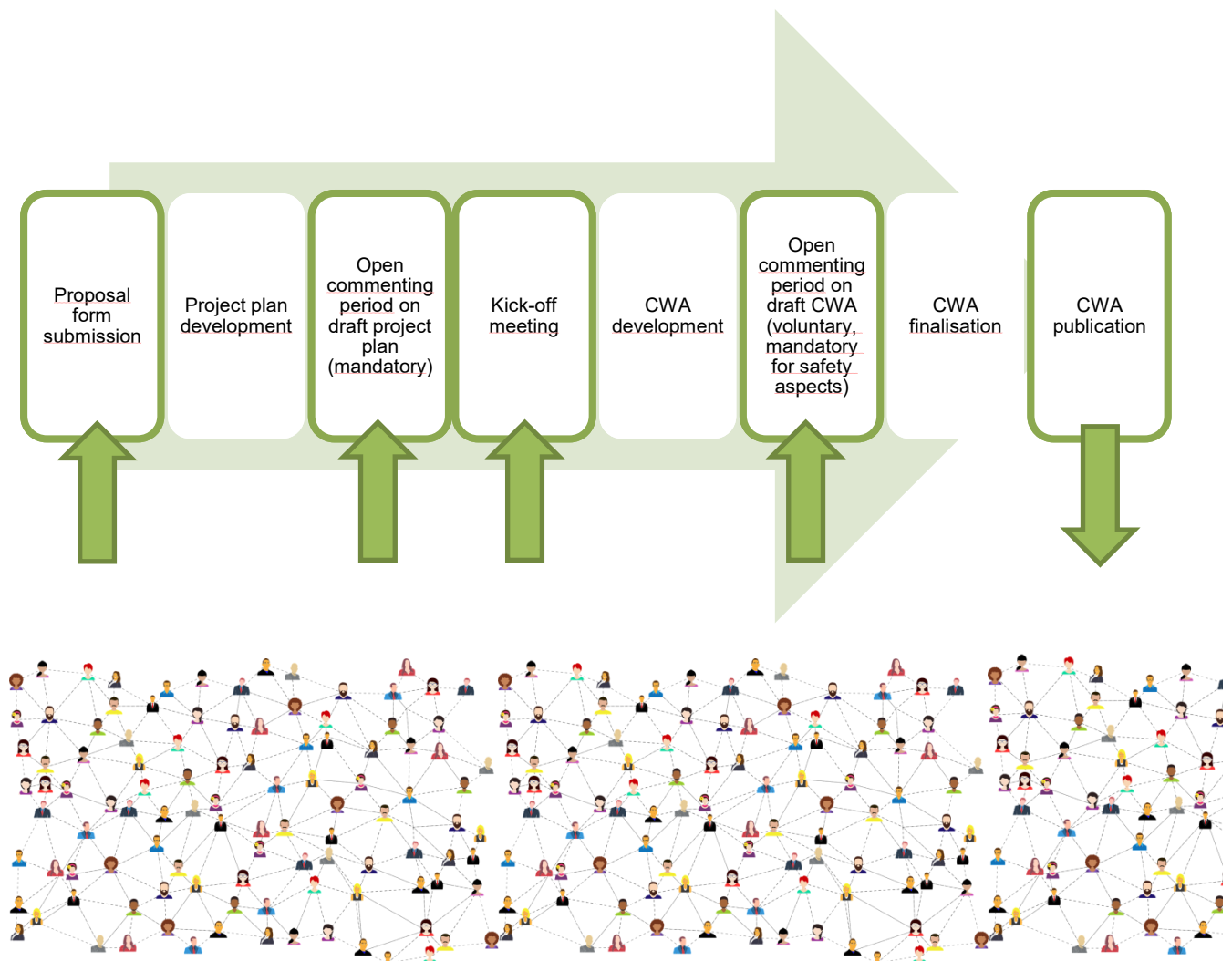
- Administrative and organisational contact point for the Workshop
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29
- Formally registers Workshop participants and maintains record of participating organisations and individuals
- Offers infrastructure and manage documents and their distribution through an electronic platform
- Prepares agenda and distribute information on meetings and meeting minutes as well as follow-up actions of the Workshop
- Initiates and manage CWA approval process upon decision by the Workshop Chair
- Interface with CEN-CENELEC Management Centre (CCMC) and Workshop Chair regarding strategic directions, problems arising, and external relationships
- Advises on CEN-CENELEC rules and bring any major problems encountered (if any) in the development of the CWA to the attention of CEN-CENELEC Management Centre (CCMC)
- Administrates the connection with relevant CEN or CENELEC/TCs

6.3 Decision making process

Each Workshop participant is entitled to vote and has one vote. If an organisation sends several experts to the Workshop, that organisation has only one vote, regardless of how many Workshop participants it sends. Transferring voting rights to other Workshop participants is not permitted. During voting procedures, decisions are passed by simple majority; abstentions do not count.

If Workshop participants cannot be present in the meetings when the CWA or its draft is adopted, an alternative means of including them in the voting procedure shall be used.

7 Dissemination and participation strategy



Proposal form submission

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for consultation:

- CEN/TC 352, Nanotechnologies
- CLC/SR 113, Nanotechnology standardization for electrical and electronics products and systems
- INNOMEM project

Open commenting period on draft project plan

The project plan will be disseminated to the following relevant stakeholders and bodies for commenting:

- CEN/TC 352, Nanotechnologies
- CLC/SR 113, Nanotechnology standardization for electrical and electronics products and systems
- INNOMEM project

In addition to the CCMC website, the project plan and the date of the kick-off meeting was be advertised on the website of OASIS to raise awareness. Interested parties were requested to contribute either through commenting of the project plan (short term) or through Workshop participation (long term).

Open commenting period on draft CWA

The draft CWA will be disseminated to the following relevant stakeholders and bodies for commenting:

- CEN/TC 352, Nanotechnologies
- CLC/SR 113, Nanotechnology standardization for electrical and electronics products and systems
- INNOMEM project

In addition to the CCMC website, the draft CWA will be advertised on the website of OASIS to raise awareness. Interested parties are requested to contribute through commenting of the draft CWA (short term).

CWA publication

The final CWA will be disseminated to the following relevant stakeholders and bodies:

- CEN/TC 352, Nanotechnologies
- CLC/SR 113, Nanotechnology standardization for electrical and electronics products and systems
- INNOMEM project

In addition to the CCMC website, the final CWA will be advertised on:

- website of OASIS
- social media:
 - LinkedIn
 - Twitter

8 Contacts

- Workshop Chair:

Jesús M^aLópez de Ipiña
 Fundación Tecnalia Research & Innovation
 Parque Tecnológico de Alava
 C / Leonardo Da Vinci 11
 E-01510 Miñano, Alava (Spain)
 +34 946 430 850
jesus.lopezdeipina@tecnalia.com
www.tecnalia.com

- Workshop Vice-Chair:

Joséphine Steck
 Commissariat à l'énergie atomique et aux énergies alternatives, CEA
 17 rue des Martyrs 38000 Grenoble
 +33. 4 38 78 64 76
josephine.steck@cea.fr
www.cea.fr

- Workshop Secretariat:

Fernando Machicado
 Asociación Española de Normalización, UNE
 C/Génova 6
 28004 Madrid
 Spain
 (+34) 914 564 637
fmachicado@une.org
www.une.org

- CEN-CENELEC Management Centre

Alessia Gaetani
 CCMC
 Rue de la Science 23
 B - 1040 Brussels, Belgium
 +32 2550 09 56
agaetani@cencenelec.eu
<https://www.cencenelec.eu/Pages/default.aspx>

- Workshop proposer

Jesús M^aLópez de Ipiña
 Fundación Tecnalia Research & Innovation
 Parque Tecnológico de Alava
 C / Leonardo Da Vinci 11
 E-01510 Miñano, Alava (Spain)
 +34 946 430 850
jesus.lopezdeipina@tecnalia.com
www.tecnalia.com