Marco Rossi
Director, Standardization

TO THE ISO MEMBER BODIES

Reference: IWA 52
Date: 2026-09-15

Invitation to an international workshop on:

Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations

Dear ISO Members,

Following approval by the Technical Management Board of a proposal from the Smart Freight Centre (SFC) and the Deutsches Institut für Normung e.V. (DIN), we are pleased to invite you to a workshop to develop an International Workshop Agreement (IWA 52) on *Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations .*

Meeting information of the Workshop

Date: 15 – 16 December 2026

Time:

2026-12-15 13:30 to 18:00 Local Time (CET);

2026-12-16 9:00 to 14:30 Local Time (CET)

Venue:

Hotel Best Front Maritim Barcelona.
Paseo de Garcia Fària, 69
08019 Barcelona
Spain

Fee: None; although all expenditures including transportation, accommodation, health insurance and visa fees will be paid by your own organization.

Remote participation: Virtual attendance is possible and the Zoom link will be shared after registration.

To participate

Please register using the online registration form.

International Organization for Standardization
Chemin de Blandonnet 8
1214 Geneva, Switzerland
Tel +41 22 749 01 11
central@iso.org

https://forms.cloud.microsoft/e/Y36DxDXa0U

The Workshop participation will be opened to registered participants only.

We would be grateful if you could publicize this event in your country.

Yours sincerely,

Marco Rossi
Director, Standardization

cc. Vice-President (technical management), General Secretary & CEO of IEC

IWA 52 - Meeting agenda and related documents

Kick-off Meeting for the International Workshop Agreement (IWA)

IWA 52 Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations

15 – 16 December 2026

Best Hotel Front Maritim, Barcelona (+ Zoom)

The Smart Freight Centre (SFC) and DIN are pleased to invite the registered participants to the Kick-Off Meeting of the International Workshop Agreement IWA 52 *Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations.*

Registration: https://forms.cloud.microsoft/e/Y36DxDXa0U

Background

In April 2026, the Smart Freight Centre (SFC) and DIN (Germany) submitted a proposal to the Secretariat of ISO's Technical Management Board (TMB) for the development of an ISO International Workshop Agreement (IWA) on harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations. The IWA 52 workshop has been approved by ISO Members in August 2026. To ensure that the broadest range of relevant interested parties worldwide are enabled to register their participation in the workshop, the invitation letter has been circulated in September 2026. DIN provides the secretariat for the development of the IWA 52.

The Smart Freight Centre (SFC), the proposer of the IWA, nominates Mr Alan Lewis as the Chairperson (to be confirmed at the Kick-Off meeting).

Please find attached as annex
Annex 1: Initial information
Annex 2: Meeting timeline
Annex 3: CLEVER project introductory brochure

Meeting information of the Kick-Off Meeting (Hybrid mode)

Date: **2026-12-15 – 2026-12-16**

Time: **2026-12-15 13:30 to 18:00 Local Time (CET);**

2026-12-16 9:00 to 14:30 Local Time (CET)

Venue: Best Hotel Front Maritim

Passeig de García Faria, 69

08019 Barcelona

Spain

Zoom: Will be shared after registration at:

https://forms.cloud.microsoft/e/Y36DxDXa0U

Notice on virtual attendance

If you are attending the meeting virtually, **please dial in at least 15 minutes before the start of the meeting** so that any technical or administrative obstacles can be removed in advance and the meeting can start on time.

The workshop will make use of the Waiting Room function.

To be admitted by the host to join the meeting we kindly ask to rename yourself in the Zoom Waiting Room. Please follow this naming convention:

Countrycode – Salutation (Ms / Mr) Last Name, First Name; Company
For example: *DE – Mr Grunewald, Christian; DIN*

(European Commission representatives please use EU and ISO representatives please use ISO instead of country code)

Thank you very much in advance!

We are looking forward to welcome you at the meeting!

Yours sincerely,

Christian Grunewald

Secretary IWA 52

Draft agenda

Day 1, 15 Dec 2026

Agenda Item			Draft Timing (CET)
1.	**Opening of the meeting and registration**		**13:30**
2.	**Roll call of workshop members**		**14:00**
3.	**Adoption of the agenda**		**14:30**
4.	**Appointment of Chairperson**		**14:45**
5.	**Introduction to ISO and the IWA Process**		**15:00**
	Coffee Break		**15:15**
6.	**IWA 52 Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations**		**15:30**
	a	Project plan	
	b	Purpose and objectives	
	c	Title and scope	
	d	Structure of the deliverable (IWA 52)	
	e	Approval of project plan	
7.	**Discussion of draft IWA 52 (part 1/2)**		**17:00**
8.	**Any other business**		**17:50**
9.	**Closure of the meeting**		**18:00**

Day 2, 16 Dec 2026

Agenda Item		Draft Timing (CET)
1.	**Opening of the meeting**	**09:00**
2.	**Adoption of the agenda**	**09:10**
3.	**Discussion of draft IWA 52 (part 2/2)**	**09:20**
4.	**Coffee Break**	**10:40**
5.	**Building of Project Teams (PT) and nomination of PT lead**	**11:00**
6.	**Lunch**	**12:00**
7.	**Open Actions and Timeline for Completion**	**13:20**
8.	**Approval of decisions taken at the Kick-Off**	**13:50**
9.	**Planning of next workshop meetings**	**14:00**
10.	**Any other business**	**14:15**
11.	**Closure of the meeting**	**14:30**

Fee: *None; although all expenditures including transportation, accommodation, health insurance and visa fees will be paid by your own organization.*

Annex 1

Initial Information

International Workshop Agreement (IWA) on Harmonized Methodology for the Calculation of Emission Factors used in Transport GHG Calculations

– IWA 52 –

Background and justification

GHG emissions from transport comprise around a quarter of total man-made, energy-related GHG emissions. GHG emissions from transport are proving difficult to reduce, while other sectors of the economy are beginning to show signs of responding to the pressure to decarbonize. That places increasing scrutiny on the efforts to decarbonize transport activities and their success.

Over the past 10-15 years, considerable effort has gone into developing and implementing a comprehensive, standardized methodology for the calculation and reporting of GHG emissions from transport operations, which culminated in the publication of ISO 14083:2023, which is now being used as the international reference point in many situations, such as the recent Count Emissions EU Regulation of the European Commission.

However, the methodology of ISO 14083 focuses on identifying the type and amount of energy (fuel) used to perform a transport operation, attributing it to the cargo consignment and / or passengers being transported and then converting the amount of energy to a GHG value using an emission factor.

ISO 14083 provides outline, normative high-level rules in Annex J on how the emission factors used in the overall GHG calculation should be formulated. However, the rules in Annex J are not comprehensive; they allow a significant amount of flexibility and are not gaining traction in the marketplace. The result is significant variation in the calculation results that continues to undermine the good work conducted to-date in developing ISO 14083.

Therefore, the next logical step is to conduct further work to harmonize the detailed methodological approach for the production of the GHG emission factors to be used when applying ISO 14083. The basis for this already exists in the form of existing lifecycle assessment frameworks, long-standing emission factor databases and emission reporting legislation. With this starting point, the European Commission has funded a HORIZON project called CLEVER (Creating Legitimate Emission Factors for Verified Emission Reductions; https://emissionfactors.eu) to build on the current state-of-the-art. This has involved initiation of an international dialogue on the need for, and development of, a harmonized methodology for transport emission factors in the European Commission's recent CountEmissions EU Regulation. The inclusive and dialogue-based approach being pursued in CLEVER lends itself to an IWA approach as the next step in a move towards a full standard for emission factors for transport energy carriers to be used in conjunction with ISO 14083.

Compared to another recently submitted IWA proposal entitled "Guidelines for harmonisation and interoperability of greenhouse gas accounting standards for industrial products", which has a very broad scope covering a variety of product types in different economic sectors and focuses on the overall carbon footprint of products, this IWA proposal is much more targeted and addresses the standardization of emission factors for energy carriers (CO_2e/MJ) used in the transport sector. The proposal falls under the remit of TC207/SC7 and was developed in consultation with the Chairman of SC 7. He agreed with the idea and pointed out that ISO 14083 will probably not go under systematic review before 2028. It was suggested that the proposed IWA should be developed in accordance with ISO 14083. As such, the planned IWA is an essential first complementary step to ISO 14083 to ensure relevance and accuracy of its calculation outputs.

The scope of the IWA relates to the lifecycle emissions associated with energy used to power transport services –also-commonly referred to as 'well-to-wheels/wake'. Experience shows that such emission factors are used in different application scenarios, e.g. calculating actual emissions associated with providing services, as inputs to corporate GHG inventories and product carbon footprints, to inform policy making and to quantify corporate investments in specific emission reduction actions. The application should define the calculation scope, system boundaries and allocation rules. However, in practice, emission factors developed for one application are often used for an unintended purpose possibly because there is no suitable alternative, out of ignorance, or possibly even with an intention to deceive. The IWA intends to build on the discussion that has already been initiated within the CLEVER project on these issues to broaden engagement, capture a broader evidence base and provide guidance that will forge a roadmap to help those involved in the development of emission factors in the future.

This proposal is closely related to the work of ISO/TC207/SC7 and is closely linked to ISO 14083:2023. The proposed IWA will not replace or compete with ISO 14083 but will serve as a basis for a possible future NWIP within ISO/TC 207/SC 7. This way, the proposal offers the possibility to investigate building a basis for a future ISO standard with a broader stakeholder circle from within and outside ISO, enabling a deeper involvement with low barriers and coordination between different views.

The proposal was initiated by the project lead of ISO 14083:2023, ensuring that the content of ISO 14083 is well known and that the envisaged project in aligned with the objectives of the standard. After a consultation with the chairperson of ISO/TC 207/SC 7, the IWA approach is considered by SC 7 and DIN as most suitable option enabling the elaboration of the document with an extended circle of stakeholders from within and outside ISO and the participation with low barriers, ensuring consistency among the topic of gas and carbon footprint. The ISO IWA process offers the possibility to elaborate a preparatory agreement that serves as a suitable basis for a subsequent NWIP.

Furthermore, the current landscape for emission factor development is as fragmented as transport GHG calculations were in 2014. ISO 14083 benefited from the prior development of developing IWA 16, which provided a roadmap for future standardization. The proposed IWA follows the same approach.

We want to clarify key definitions and concepts for emission factors, their development and use, rather than defining requirements, and to outline next steps for standardization, including committee coordination and timing.

During the initiation phase it was agreed that a liaison to the TCs listed as relevant in the section below will be created.
To enable a seamless exchange of information and documents, the liaison applications will already be started during the application phase of the IWA.

ISO/TC 297 brought the VECTO tool to our attention.
In the transport sector, there is a tool for the standardized energy consumption calculation of vehicles (trucks & buses), which was developed a few years ago by the EU Commission: VECTO.
https://climate.ec.europa.eu/eu-action/transport-decarbonisation/road-transport/vehicle-energy-consumption-calculation-tool-vecto_en

The CO2 declaration of vehicles according to the simulation tool has been legally binding throughout the EU since January 1, 2024.

This is based on Regulation (EU) 2017/2400: https://eur-lex.europa.eu/eli/reg/2017/2400/oj?locale=de
Based on this, the following ISO standards have been published (already mentioned in the IWA proposal – NP ballot for revision currently in place):
ISO/TC 297: ISO 24162:2022, Test methods for the energy consumption of refuse collection vehicles
The VECTO tool and the respective standards will be taken into account. At the same time, attention is drawn to the varying national conditions and levels of readiness.

The IMO as important stakeholder in the maritime field was already contacted and a talk was held on October 2025. They will be invited to join the consortium to ensure that the evolving IMO guidelines are taken into account in the IWA through a mutual exchange of information.

Proposer

Smart Freight Centre (SFC)

SFC is a global non-profit organization dedicated to an efficient and zero-emissions global freight transport sector. We bring together the global logistics community to drive transparency in GHG calculation and reporting, and to mobilize multinational companies and their logistics partners to take action.

Our role is to:

- Provide companies with global, standardized guidelines and approaches for emission calculation, reporting, reduction and collaboration, the first of which was the GLEC Framework
- Advocate for industry-wide adoption, collaboration and supportive policy together with partners
- Recognize companies that demonstrate Smart Freight Leadership and raise awareness

SFC takes an active role in engaging with the international community of standardization, emission reporting and regulatory bodies to continually improve and align the approaches taken around emission calculation and reporting to meet the needs of our members and broader societal objectives.

SFC also supports companies and partners directly through advice, assessments, training and events. To scale our impact, we are present in Europe, the Americas and Asia and collaborate with existing initiatives, international institutions, partner organizations and experts worldwide

Relevant ISO committees and documents

ISO committees

ISO/TC 207/SC7 Greenhouse gas and climate change management and related activities
ISO/TC 207/SC 5 Life cycle assessment
ISO/TC 8 Ships and marine technology
ISO/TC 20 Aircraft and space vehicles
ISO/TC 22 Road vehicles
ISO/TC 59/SC 17/WG 5 Sustainability of civil engineering works
ISO/TC 195/SC 2 Road operation machinery and associated equipment
ISO/TC 204 Intelligent Transport Systems
ISO/TC 238 Solid Biofuels and Pyrogenic Biocarbon
ISO/TC 265 Carbon Capture
ISO/TC 269 Railway applications
ISO/TC 297 Waste collection and transportation management
ISO/TC 315 Cold chain logistics
ISO/TC 344 Innovative logistics
ISO/IEC JTC 4 Smart and sustainable cities and communities
CEN/TC 320 Transport, logistics and services

ISO documents

ISO 14083:2023 Greenhouse gases. Quantification and reporting of greenhouse gas emissions arising from transport chain operations
ISO 14040:2006/Amd 1:2020 Environmental management — Life cycle assessment — Principles and framework
ISO 14044:2006/Amd 2:2020 Environmental management — Life cycle assessment — Requirements and guidelines
ISO 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification
ISO 37182:2022 „Smart community infrastructures — Smart transportation for fuel efficiency and pollution emission reduction in bus transportation services
ISO 24162:2022, Test method for energy consumption of refuse collection vehicles
ISO/FDIS 25333, Road sweepers — Environmental efficiency — Requirements on the test procedure for energy consumption
ISO 37154 Smart community infrastructures — Best practice guidelines for transportation
ISO 37159 Smart community infrastructures — Smart transportation for rapid transit in and between large city zones and their surrounding areas

National documents

DIN SPEC 30752-1:2018 Refuse collection vehicles - Environmental efficiency - Part 1: Requirements on the test procedure for energy consumption at the collection area
DIN SPEC 30752-2:2018 Skip loader and roller contact tipper vehicles - Environmental efficiency - Part 2: Theoretical calculation of energy consumption for multi-bucket system vehicles
DIN TS 30752-3:2021 Road sweepers - Environmental efficiency - Part 3: Requirements on the test procedure for energy consumption
DIN TS 30752-4:2022 Suction vehicles and high pressure flushing vehicles - Environmental efficiency - Part 4: Theoretical calculation of energy consumption for suction vehicles and high pressure flushing vehicles
DIN TS 30752-5:2020 Machines for winter service - Environmental efficiency - Part 5: Theoretical calculation of energy consumption for salt-spreaders.

Relevant stakeholders (list of organizations that may be interested)

International Civil Aviation Organization (ICAO)
International Maritime Organization (IMO)
International Air transport Association (IATA)
GHG Protocol (WRI & WBCSD)
CDP
SBTi
International Council for Clean transportation (ICCT)
International Transport Forum (ITF)
Central Commission for the Navigation of the Rhine (CCNR)
Deutsche Post DHL
Maersk
Kuehne + Nagel
Maersk McKinney Moeller Centre for Zero Carbon Shipping (MMMCZCS)
DNV
European Commission: Directorates General Move, Ener & Clima; European Commission JRC
European Environment Agency
US Environmental Protection Agency (USEPA)
Agence de la transition écologique (Ademe)
United nations Economic Commission for Europe (UNECE)
Argonne National Laboratory
Transport & Environment (T&E)
Environmental Defense Fund
Traficom
Global Maritime Forum
TK'Blue
EcoTransIT
SeaRoutes
Bigmile
Shipzero
Shell
Concawe
Eucar
EcoInvent
Sphera
Lloyds Register
Clean Fuels Alliance
UK Renewable transport Fuels Association
European Biodiesel Board
RSB
ISCC
Neste
Repsol
Eco Energy
European Commission
CE Delft
Agendi
CLEVER research project consortium

Member body willing to act as secretariat

DIN – German Institute for Standardization

Meeting Schedule

2026-12-15 – 2026-12-16 (in person, Barcelona, Spain)
2027 January (online)
2027 February (online)
2027-03-04 – 2027-03-05 March (in person, Berlin, Germany)
2027 April (online)

Contact Details

Proposer

Name: Alan Lewis & Lily Ouyang

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Secretariat

Name: Christian Grunewald & Sarah Köhler

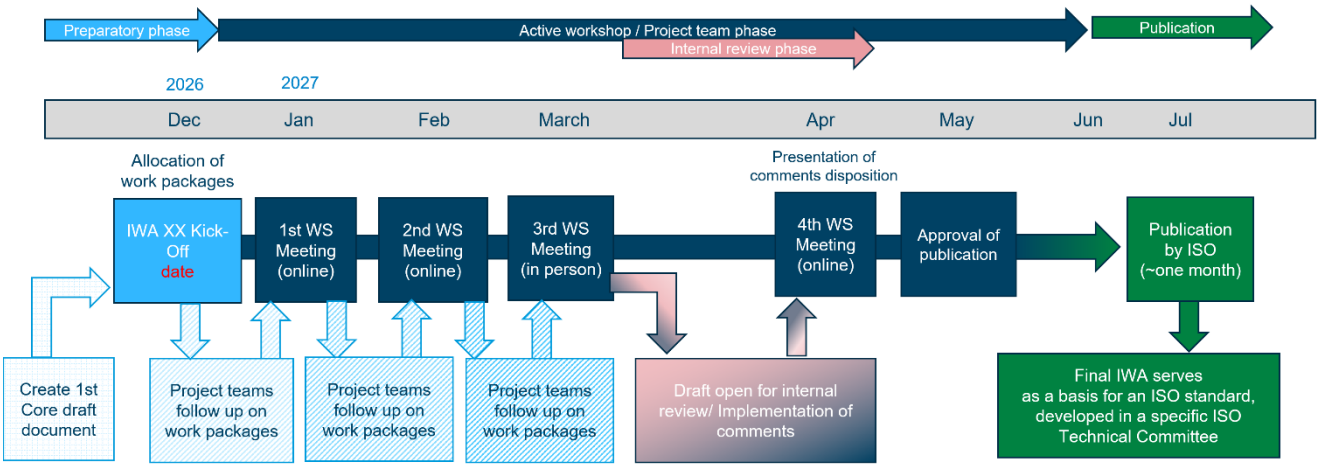
Email: christian.grunewald@din.de & sarah.koehler@din.de

Further Information

https://www.din.de/en/din-und-seine-partner/presse/mitteilungen/transport-ghg-emission-factors-1286554

Annex 2

Meeting timeline



Annex 3

CLEVER

Project Concept & Objectives

MAR
2024

CLEVER

Background

CLEVER: CREATING LEGITIMATE EMISSION FACTORS FOR VERIFIED GHG EMISSION REDUCTIONS IN TRANSPORT

GHG emissions from transport comprise around a quarter of total man-made, energy-related GHG emissions.

Demand for transport services is increasing, meaning that transport GHG emissions are projected to increase in absolute terms and even more so as a proportion of the total as other sectors of the economy begin to address and reduce their emissions. Therefore, gaining an accurate picture of GHG emissions from transport activity is a clear priority if we are to meet the GHG emission reduction targets set out in the Paris Climate agreement.

The focus on quantification of GHGs from transport over the past decade has largely been on the development and implementation of a common, global calculation and reporting methodology, with considerable recent success. However, to make best use of this step change methodology for calculation, reporting and, most importantly, emission reduction in the transport sector it is crucial to use the best possible input data. This relies on the use of the best possible emission factors as part of the calculation.

Emission factors are the values that quantify the amount of GHGs emitted to the atmosphere for a given amount of energy consumed and a key input at the heart of any calculation of GHG emissions.

However, **emission factors have suffered from a lack of coordinated focus** over the past few years. Whilst there has been a proliferation of work on development of potential new low carbon energy pathways, and an increase in the understanding of the fossil fuel production and distribution chain2, work on developing emission factors has proceeded in an uncoordinated way for different transport modes and across different geographies. This has, in turn, resulted in a proliferation of misaligned values. The result is confusion for the end user and potential paralysis in decision making or, even worse, decision making using emission factor sources/values based purely on the basis of what is beneficial to the individual entity rather than what is correct.

Furthermore, it is well-understood that GHG emission calculations need to be made on as complete a basis as possible to avoid transfer of emissions between different sectors of the economy without an overall reduction. This is particularly important when considering novel low carbon energy pathways because the emissions occur within a very different production and use lifecycle compared to the conventional, fossil fuels they replace.

Despite this, the established approach to take into account the emissions from full energy life-cycle and to account for all GHGs from the full production and distribution lifecycle in terms of their CO2 equivalents is only now gaining traction of some parts of the transport sector.

ACTIVITIES WITHIN **CLEVER**

The work that has already been done on emission factor development around the world and in the different modes does provide a rich, if varied, starting point towards a **unified approach to production of GHG emission factors for the transport sector.**

The aim of the project is, therefore, not to start from scratch but to **bring together the existing knowledge and refine it through a collaborative process.**

Therefore it is crucial that the CLEVER project brings together, in addition to the formal project partners, other participants from a wide range of related stakeholder groups with an interest in ensuring that the emission factors used for transport GHG calculations are comprehensive, accurate, consistent and based on the latest climate science as it relates to the full lifecycle of each transport energy carrier, whether conventional or novel.

This group of experts drawn from the **full ecosystem of producers of feedstocks** used for fuel production, fuel producers, distributors, transport service providers and their customers, policy makers and NGOs who often determine the specification of GHG emission reports, and those who develop and certify the emission factors that cover the needs of all these groups, will all be crucial to the success of the project.

The participating experts will be asked, on a purely voluntary and flexible basis, to get involved in a range of surveys and discussion forums on selected topics related to the work of the CLEVER project and to provide feedback on the project outputs as they become available.

This is intended to provide the best possible chance of reaching a wide-ranging consensus on this important topic.

THE FULL RANGE OF ACTIVITIES PROPOSED TO BE ADDRESSED IN CLEVER ADDRESSES A TASK WITHIN THE EUROPEAN COMMISSION WORK PROGRAM THAT CAN BE SUMMARIZED AS:

Bringing together the key stakeholders from the ecosystem to form an Expert Forum.

Identifying the current range and state-of-the-art of approaches to emission factor calculation methodologies and using this to identify areas of good/common practice, areas of uncertainty and gaps which need to be filled along with potential pre-existing solutions.

Using existing sources, wherever possible, to agree upon a common set of rules on which emission factors should be based, covering, for example:

1

METHODOLOGY
To ensure that the basis of and legitimate use of the two fundamental methodology types (consequential and attributional) are properly understood and applied appropriately

2

BOUNDARIES OF CALCULATION
To ensure that boundaries are not accidentally or deliberately set in order to favour particular outcomes

3

COMMON SETS OF FUEL / ENERGY SPECIFICATIONS
To ensure that data labels and associated values are truly aligned between sources

4

ASSUMPTIONS ABOUT INPUT PARAMETERS
That can result in variations in output values based on local circumstances for specific production are fully specified

5

THE BASIS FOR CALCULATING EMISSION FACTORS
For new energy carriers to be calculated quickly and reliably to avoid delaying the deployment of new, beneficial solutions

Agreeing a common set of rules on how they should be published and made for use in GHG calculations.

An overall guidance document that explains the project's outputs in an accessible format, backed up by a formal database consisting of a first set of emission factor ranges and default values that follows the aforementioned rules, which is anticipated to form the basis of an emission factor database to be incorporated within the implementation of the CountEmissions EU Directive.

Taking steps to engage with a wider audience about this work to establish greater awareness and clarity in the marketplace through dissemination, use-case-based testing and a range of training activities.

Taking steps to initiate a formal standardization process to support this work.

Given that **emission factors are applied at international level in a global transportation market** efforts are already being made to ensure that globally relevant bodies such as IMO, ICAO and the Argonne National Laboratory are involved alongside prominent European stakeholders.