Joint Industrial Program proposal for ECCC – JIP5 January 2025 - December 2027

Chairman: A. Di Gianfrancesco

Executive Committee: G. Merckling, T.-U. Kern, C. Bullough, M. Spindler, S. Holmström, M. Schwienheer, A. Facco Secretary: I. Salvatori

Revised JIP Description: JIP5, January 2025-December 2027

Based on the JIP 1 Description by Merckling et al., 2010. Amendments to the JIP 1 Description, as agreed from time to time by the ECCC Management Committee, are listed in Appendix 2. For JIP 5, the "Executive Summary" now issued in parallel with this document provides an update on recent ECCC activities and evolving project initiatives.

1 Introduction

Since 1991, the European Creep Collaborative Committee (ECCC) has successfully determined creep rupture strength values for the most commonly used alloy grades in high temperature plants. These values were derived by a commonly developed and agreed assessment evaluation procedure using experimental datasets collated in joint European (worldwide, for some grades) initiatives by approaching all possible data producing organisations. Up to now, about 60 alloy grades have been analysed and many of the determined strength values are included in the European Standards EN 10028-2, EN 10216-2, EN 10222-2, EN 10352-2, EN 10269, EN 10302, etc. Nevertheless, for some alloy grades, testing has continued since the last ECCC assessments, longer test duration results will be available, and there will be a need for up-to-date dataset re-assessment for some alloys. Moreover, there is a requirement for the assessment of new materials, which have not previously been analysed, like Grade 93 or materials produced by additive manufacturing.

ECCC data assessments have traditionally been conducted according to common procedures developed by its WG1 technical working group. Knowledge relating to the understanding of creep deformation and damage mechanisms, and the technology available for their assessment continue to advance. These must be exploited to ensure that ECCC actions continue to be state-of-the-art.

There is still an important requirement for the activities of ECCC, and the following note considers the way forward in the form of a Joint Industrial Project.

2 General Aims

In the past 34 years, ECCC has gained a strategically relevant position and the JIP program gave the opportunity to continue the activities at top scientific and technical levels.

Besides the Technical Programme, the following general key goals are to be addressed:

- ECCC wants to keep, maintain and enhance its technological reputation based on the published ECCC creep data assessments and datasheets.
- ECCC is worldwide the strongest promoter for long term creep data production, their assessment and correct exploitation.
- The discussion forums in the ECCC WGs have been and want to continue to be a means for discussing HT technology and sharing the state of the art, including discussion on future innovation.
- The formerly intimate relationship between ECCC and the CEN TCs responsible for the relevant material standards needs to be maintained.
- EN/ISO Standards including long-term creep strength values are shortly due for revision. ECCC's expertise in updating the partially outdated creep property tables and in including assessed values

for not yet standardized materials is essential to determine reliable creep strengths for plant designers.

- Also, the European Pressure Vessel Directive PED is under revision and will include more detailed statements on HT service, for which ECCC's expertise in creep is important.
- As modern design, dimensioning but also "fit for service" and "risk-based inspections and analyses" rely more and more on FEM based non-linear simulation, high quality creep descriptive model equations, as achievable within ECCC, are of industrial interest.
- ECCC is a proven partnership to safeguard HT materials properties and to promote research on this field of interest.
- ECCC wants to improve the relationship with EERA (European Energy Research Alliance) Joint Programme on Nuclear Materials.

3 <u>Technical Program</u>

It is planned to support the next three years term (2025-2027) of ECCC activities by the formation of the fifth Joint Industrial Project to support ongoing joint creep behaviour assessment and enhance understanding, and to prepare the scenario for possible future EC funded Actions, if and when suitable Calls arise.

It is proposed to retain, as far as is possible, the original concept of ECCC based on the Memorandum of Understanding from 1992. ECCC will therefore aim to:

- Coordinate the generation of creep data Europe-wide,
- Interact with and provide information to European Standards Committees,
- Mutually exchange technical information on current and future activities relating to material developments, and
- Develop rules for data generation, collation and assessment.
- <u>Review of the old datasheets</u> and selection of old datasheets to be upgraded with new raw data, data from literature and assessment methods based on EPATs and new CRDA developed in JIP4.
- Improve the knowledge on Materials for Combined Cycle and nuclear power plants.
- Organize the 7th International ECCC Creep & Fracture Conference in Aix en Provence (France) 18th-20th May 2026.

3.1 <u>Coordinated Generation of Creep Data Europe-Wide</u>

ECCC activities are accompanied with joint and coordinated creep data generation activities commonly produced in kind by the member countries and organisations. Among the proposed activities to be approved by the ECCC Management Committee in its next meetings are:

- Evaluation of different martensitic steels, like Grade 93, EUROFER97, MARBN and NPM1P, etc., with and without similar and dissimilar welds and using materials of different alloy producers.
- For the austenitic steels:
 - complete the current creep dataset with new experimental results and perform new model assessment.
 - Study the creep behavior of several base metals with slight differences on chemical composition (N, Nb, ...) or microstructure parameters (grain size) in order to evaluate its impact on creep performances
 - Study the creep behavior of welds of 316L(N) materials obtained following different welding processes
 - Propose a way to get a sensible evaluation of the impact of slight differences in chemical compositions or in manufacturing and/or welding process on creep performances without performing a complete set of experiments generally necessary to deduce creep

curve. What uncertainties could be proposed with such an approach, taking into account that we are dealing only with variations of a material originally well characterized.

- Testing and evaluation of Nickel base alloys, e.g. alloy 617mod, IN718 (SLM with and without HIP or other process i.e. LPBF or WAAM), ODS materials, Allvac 718+, Alloy 230, including creep performance of welds and materials from HIP process,
- Round robin testing exercises, for example a proposed round robin on small scale creep testing on reference material Nimonic 75 superalloy also in collaboration with Japanese and Indian Institutions;
- Identification of negligible creep condition for superalloys;
- Comparation of non-destructive or semi-/non-invasive assessment methods for the assessment of ageing or creep damage status of 9%-Cr steels and the contribution to the generation of reference curves for these assessment methods.
- Aberrant (non-martensitic) high alloy steels.
- Relationship between tensile and creep properties, including the influence of initial plastic strain.
- Miniature and Impression creep testing methods and data evaluation.
- High temperature performance in flexible plant operation.
- Remanent life prediction based on analysis of lower bound creep data from tests on as-manufactured materials.

3.2 Interaction With And Provision Of Information For European Standards

In the previous JIPs essential focus was placed on:

• 9%-12%Cr steels and their development, providing newest up-to-date strength values for creep rupture and 1%-strain for base materials, as well as weldments. Particular interesting features like fully re-heat-treated weldments of Steel 91 grades with the same nominal creep strength as the base material (ASTM A692 Class 42) could be considered.

In the JIP5 focus will be placed on:

- New low alloy grades, for which European Standard creep strength values currently do not exist (e.g. Grades 23, modified 22, etc.).
- Collation and assessment of Nickel base alloys expected to be most relevant in future, like 617, 263, 740H, 230, 600, 625, 718, 718+, Waspalloy, etc.
- Review of older ECCC Data Sheets to be improved and completed with creep strength model equations.
- Review of creep strengths of different product types of the same grade and consideration given to other factors such as composition balance within grades, initial yield strength, etc.
- Cast engineering alloys and steels creep strength assessment (with the exception of cast 91 grade steel C12A), which is already included in the data sheets.

3.3 <u>Mutual Technical Exchange Of Information On Current And Future</u> <u>Activities On HT Materials</u>

Topics of interest to be discussed as potential future work items include:

- Future development of ferritic-martensitic steels for service at temperatures above 620°C (i.e. Grade 93) in conventional USC/AUSC fossil fuel power or Combined Cycle Power Plants,
- Recommendations for future materials in boilers, turbines, pipework, and potentially in nuclear plant applications,
- Residual life assessment and service-induced long term creep strength reduction in the 9-12% Cr martensitic steels for >100,000h.
- Future development of materials for GEN-IV nuclear power plants.

3.4 Development Of Rules For Data Generation, Collation And Assessment

Although in the past a significant re-orientation of creep strength assessment approaches has been achieved, several relevant new questions have arisen:

- A review of main ECCC Datasheets based on results of the PAT's procedures review started in JIP4.
- Further steps in weld creep strength assessment and evaluation have to be undertaken in order to define weld strength reduction factors and their possible time dependence;
- Creep strain assessment and creep crack initiation data assessment rules need to be finalised;
- Feasibility has to be explored of extrapolation of credible creep strength from short term data through innovative test and assessment methods (i.e. Licon, etc.);
- Small Scale testing and assessment, and correlation with uni-axial data have to be further explored; a Round Robin program is scheduled to start on Small Punch Test, Small Punch Creep Test, Impression Creep Test and Small Scale Creep Test on Nimonic 75 reference materials and comparison with conventional Creep test results;
- Procedure for creep test in aggressive environment (i.e. oxidation, in liquid lead for nuclear applications);
- Creep curve modelling (strain/time);
- Consideration of additional factors such as composition balance, product form, initial microstructure and strength;
- Collection of Fatigue, Creep-fatigue data;
- ECCC Volumes Update;
- The possibilities for implementing new static methods for modelling creep and time expansion behaviour are to be investigated using or not the Artificial Intelligence;
- Evaluation of the performances of Artificial Intelligence to propose creep curves based on large experimental sets of data: comparison of the predictions obtained by EPATs and new CRDA developed in JIP4 with AI models.

3.5 <u>(In Addition To The MoU): Interaction And Possible Collaboration With</u> <u>Similar Non-European Organisations And Institutions</u>

Possible collaboration partners have been contacted:

- National Institute for Material Science of Japan (NIMS)
- American Society of Mechanical Engineering (ASME) Pressure Vessel Code Committees for Material Strength
- Indian Institute of Technology
- Possibly, Chinese Organisations via the Shanghai Power Equipment Research Institute SPERI or CISRI (Central Iron and Steel Research Institute)

No collaboration activities will be pursued except with the approval of the MC. Any collaboration will also require to be regulated by an "intentions and activities" clarification document, to be mutually agreed between the ECCC MC and the related partner organisation.

4 <u>Rules</u>

4.1 ECCC Membership

It is proposed to retain, as far as is possible, the original concept of ECCC as defined in the 1992 Memorandum of Understanding:

- ECCC is a European organisation with only European Members.
- National membership will continue to be the basis of ECCC technical organisation (see Figure 1),
- A National Annual Contribution (NAC) is requested. This is to be contributed (see Figure 2) by a combination of testing, "raw" creep data (see Figure 3), in kind activity and, where appropriated, money (Figure 4), the total amounting to 25 Equivalent Stress Rupture Specimen Years per year. The Secretariat, together with the Executive Committee (EXEC), will keep account of the national contributions which allows for participation in the WG. The total contributed testing resources will be distributed in a suitable manner by the MC on EXEC proposal
 - If a Country cannot provide the required annual contribution and agrees to participate in only one confidential WG (3A or 3B etc.), it will be considered a "small" country, and the fee is reduced to ¼. NAC.
 - $\circ\,$ A "big" country is one for which the annual contribution considerably exceeds the requested NAC.
- Full member nations have a seat and vote in MC. "Big" countries with large contributions have 3 seats and 3 votes, countries which provide the required NAC have 2, and small countries 1.
- <u>Data exchange in WG3x is confidential</u>, i.e. only for ECCC-WG3.x members and to ECCC member companies via National MC Representative with the approval of the relevant WG Convenor. The basic principle is that data exchange should be between the data contributors and those undertaking compilation and assessment. In particular cases, additional confidentiality agreements may be negotiated.
- Funded Technical Work is assigned on formal application, based on a specification issued by the related WG and on approval by the WG in the first instance, and then also by EXEC/Secretariat. Before payment, acceptance of the results of the work is evaluated (according to ECCC Recommendations) by WG3.x and EXEC.



• ECCC Data Sheets and Recommendations will be public.

Figure 1: Interaction between ECCC, JIP, and the National Creep Committee (where this exists)

4.2 ECCC Contribution

The following figures 2-3-4 illustrate the main rules for the Nations and the partnership. The contribute to organize ECCC conference or workshop will be taken into account.







PROPOSED EQUIVALENCIES

In Equivalent SR Specimen Years per Year ESRSY/a

- 1 stress rupture specimen year per year on multistring or multispecimen machine
 1 ESRSY/a
- 1 creep rupture specimen year per year on multistring or multispecimen machine 1,5 ESRSY/a
- 1 creep rupture specimen year per year on single specimen machine 2 ESRSY/a
- 1 creep rupture specimen year per year on single specimen machine at temperature above 650°C 3 ESRSY/a
- 1 creep rupture specimen year per year on single specimen machine at temperature above 900°C 4 ESRSY/a

Figure 3: National Annual Contribution: Testing and Test data Equivalencies.



Contribution to ECCC



PROPOSED EQUIVALENCIES (cont.)

In Equivalent SR Specimen Years per Year ESRSY/a

- 500 € (including material value or other services which can be priced objectively) 1 ESRSY/a
- Special activities in/for ECCC (except where the activity is not funded by ECCC already))

1.	Convenorship	3 ESRSY/a
2.	Sub-Convenorship	1 ESRSY/a
3.	Data Assessment	1 ESRSY/a
4.	Special Report	1 to 2 ESRSY/a
5.	EXEC participation	1 ESRSY/a

Figure 4: National Annual Contribution: Money and Activity Equivalencies

4.3 JIP Participation

- The JIP participation is organisation-based, but requires the Organisation Nation to be a member of ECCC (see Figure 1).
- It is regulated on a National basis via the related National Creep Committee (NCC) and its rules, where such a Committee has been founded and has become an ECCC member (DE, UK, IT, FR etc.) The JIP Secretariat and the ECCC EXEC will encourage contact between companies belonging to the same Nation, to form a National Committee to equitably share the ECCC contribution. It is recommended that the NCC oversees the NAC, the data exchange with ECCC, and regulates the distribution of information among the JIP participants
- It requires annual fee payment. Figure 5 shows the NAC and the JIP fee and their interaction.
- It is necessary to allow an organization to participate in ECCC WG meetings, or to access non-public ECCC documentation.
- Does not provide access to creep data when this is not compliant to ECCC rules. However, JIP participation will provide access to all experimental data newly created in the ECCC joint projects during the duration of the JIP.
- It is necessary to allow an organization access to raw creep data collations delivered in exchange from ECCC, with the approval of the relevant WG3.x Convener.
- Does not count towards the NAC (see Figure 5).
- Allows the JIP participant to apply for technical work (for instance data assessment) defined in an ECCC issued specification and to be conducted in accordance with the ECCC recommendations.
- It ensures that the participant will be kept informed of future project developments.

ECCC National Contribute NAC versus JIP fee



Figure 5: Contributions to ECCC and to JIP, and their interaction. (The figures relating to RINA-CSM are only examples, see paragraph 5)

4.4 JIP Participation Conditions

- JIP Participation will be on a single common basis, irrespective whether the participant is from industry, end-user companies, R&D centres, University or other,
- Each Organization has to sign an application form with the Designated Secretariat which includes the administrative and economic details, and has the present document as a technical specification. The application form (see file "ECCC JIP Application Form" in the Appendix) acts as a form of "order" between Designated Secretariat and the partner, on the basis of which an invoice can be issued and paid.
- Each organisation should sign the 1992 ECCC MoU.
- Each organization should join one or more Working Groups and should make an active contribution to the work program.
- National creep committee (NCC), if available (i.e. UK, DE, IT, FR), will be also represented without fee, provided that the national representative also represents a JIP participant organisation. For Countries with more than one organization, a National Coordinator is recommended. The National Coordinator will coordinate and define the NCC's action with ECCC as the country's MC representative.

Proposed Future ECCC Structure



Figure 6: The Proposed ECCC Structure¹

4.5 Structure

4.4.1 Management Committee (MC)

The Management Committee will include:

- Voting Members:
 - National Representatives from each ECCC Member Country, on the basis of the original concept of ECCC as described above, as the only Voting Participants.
- Non-voting members, if not at the same time also National Representatives:
 - All the Conveners
 - The Secretariat
 - The EXEC members, if not National Representatives.

The MC leads the ECCC and is responsible for the technical and economic directions for ECCC. The MC elects the 6 voting members of the EXEC, who will include the MC Chairman and the two Vice-Chairmen and the Secretariat (non-voting member).

The MC elects and empowers the WG-Conveners.

- The MC supervises (supported by EXEC and Secretariat)
 - 1. the National Contributions to ECCC (NAC),
 - 2. the Joint Testing Programs,
 - 3. Data Confidentiality Issues,
 - 4. Interaction with any external body (CEN, ISO, ASME, etc.)

The MC approves:

- 1. (on WG Convener recommendation) the WGs' working programs (technical, budget)
- 2. (on WG Convener recommendation) the total budget in order to avoid overspending, setting priorities,
- 3. (on WG Convener recommendation) the official versions of data sheets and recommendations
- 4. before publication, ECCC related scientific articles to conferences and papers,
- 5. (on EXEC recommendation) the MC minutes as prepared by the Secretariat.
- 6. (on EXEC recommendation) collaboration with other organizations based on specific agreement documents (see chapter 3.5).

¹ As originally proposed in 2010

4.4.2 Executive Committee (EXEC)

The Executive Committee will be composed of 6 members elected by the MC and it will:

- Via the EXEC Chairman, being also the MC Chairman, preside the MC
- Prepare MC decisions, but will need MC approval for any strategic issue (see 4.3.1.)
- Supervise the JIP
- Interact with Secretariat
- Control application of the rules (ECCC and JIP)
- Manage operating decisions on a day-to-day basis on behalf of the MC
- Examine and oversee JIP accounts on behalf of ECCC
- Assign (on WG Convener recommendation) the supported work packages funded by the JIP to single companies.

4.4.3 Working Groups (WG)

The WGs are led by a Convener elected by the MC and a sub-convener, defined by the WG, that supports the Convener as a deputy or may have some delegated responsibilities. Every JIP participant may apply to work within one of the "free membership" WGs (WG1 and 2); Membership to a "confidential" WG (WG3 and its sub-groups) is restricted to ECCC members contributing raw data or active in test programs, data collation and/or assessment or associated activities.

The WG Convener (aided by the sub-convener and WG members) is responsible for:

- Preparing and after WG and MC approval following the Working Program of the WG,
- Chairing the WG meetings,
- Co-ordinating WG work,
- Approving the WG minutes (prepared by the Secretariat),
- Supervising the experimental data distribution and confidentiality issues according to the rules issued by the MC,
- Supervising WG output documents,
- Supporting interaction with external organizations, but only when authorized by the MC,
- Preparing the specification for, supervising and organising the WG's approval on funded and not funded (i.e. part of a National Contribution) work packages assigned, supported by the WG members.

The WG members are expected to actively contribute to the WG work and their contribution (in activity, e.g. assessments) will be monitored by the Secretariat and the Convener. Non active members could be excluded by WG decision.

4.4.4 <u>Secretariat</u>

Tasks and issues related to the Secretariat are summarized in chapters 5 and 6. The Secretariat will be allocated to a Company within an ECCC member Nation. The allocation of the Secretariat will be determined by the MC on the sole basis of ensuring the most effective administration of the JIP. The Designated Secretariat will be in charge for a three years period that will be prolonged if not terminated by either the MC or the Designated Secretariat, six months in advance of the contract expiry date.

4.5 <u>Technical Information Handling</u>

4.5.1 <u>Confidentiality</u>

All topics handled within ECCC are agreed to be confidential as set forth in the ECCC MoU and the present JIP. In particular:

• Contributed and "old" creep data are only handled within the WG3 and are accessible only to the data contributing WG members (see 4.3.3.) and to ECCC members via formal request through

their National representatives to the WG Convener and the MC.

- Jointly produced "new" creep data via the ECCC National contributions are shared following the rules of chapter 4.
- WG documents can be accessed by the WG members only,
- The access to the non-public ECCC Web site will be regulated by a suitable safety system. Also earlier ECCC documents are only accessible through the web-site and its confidentiality regulating system
- Public ECCC documents require MC approval (based on related WG Convener recommendation)
- Personal publications based on ECCC induced findings or data need to quote ECCC and the approval of the related WG Convener, who may request MC intervention in particular cases or situations.
- Data exchange with organisations outside the ECCC may occur if
 - MC has formally approved the data exchange and nominated an official delegate to organize this data exchange
 - The related WG Convener and group have been informed of the data exchange activity and the MC approval (if not requested directly via the WG Convener).
 - The results from this data exchange shall be reported to ECCC MC in order to give ECCC a benefit from this data exchange
 - If non-European organizations are involved, a document of agreement has been prepared and undersigned by both organizations that provides sufficient assurance for mutual confidentiality about relevant information (see chapter 3.5).

4.5.2 Liability

All ECCC documents meant for the public domain will quote a disclaimer that states that "Although the published information has been carefully evaluated, warranty for the validity of the information cannot be given. The user of ECCC information takes sole responsibility for any use of the information." All public ECCC documents will also contain an ECCC copyright declaration.

4.5.3 Copyright

The copyright of all information published on behalf of ECCC on paper, during oral presentations or by electronic means stays with the ECCC Management Committee. Reproduction is not allowed if not with explicit authorisation by the ECCC Management Committee. A legally suitable statement in this sense has to be applied to each document issued on behalf of ECCC.

5 Designated Secretariat

For the JIP 5 time period starting January 1st 2025 and for the minimum duration of three years, that is renewed according the statement above (chapter 4.4.4) Rina Consulting - Centro Sviluppo Materiali Spa – Rome, Italy (RINA-CSM) is the designated Secretariat on the basis of this proposal.

6 Annual Budget Share Proposal and Secretariat Activities

6.1 <u>RINA-CSM Budget Proposals</u>

The fee for participation in the JIP will be 2500 Euro per partner per year for 3 years. If less than 18 organisations agree to participate, RINA-CSM may defer or cancel the JIP.

If 18 or more organisations participate in the JIP, the following annual budget share for the RINA-CSM operational costs is proposed:

A. The JIP 5 RINA-CSM secretariat activity will last 3 Years, starting from 1/1/2025, and have an operational budget of 39.500 Euro per year, plus 500 € for each additional participant in

excess of 24 in the event that more than 24 organisations participate. The basic operational tasks to be undertaken by RINA-CSM will be:

- Contracts management: invoices and payments
- WG Secretariat activities including:
 - Organisation of contacts and meetings administration. Hosting and resource provision for meetings may be undertaken by RINA-CSM, or alternatively, by agreement, by a participant organisation.
 - WG minutes preparation
 - A full meeting minutes, available after Convener approval to the active WG members
- Account of partners and countries contribution
- Management Committee Secretariat including:
 - Organisation (contacts and resources for meetings as described above, budget plan for the running year, etc.)
 - Minutes preparation, to be issued to all MC members after EXEC approval
- Administrative support
- ECCC documentation management support within SharePoint area
- Management of ECCC public website eccc-creep.com
- Meetings organisation: the operational budget includes the organisation of the two main online meetings. Extra costs of 3.000€ will be charged for meetings with physical participation.
- B. All available funds in excess of the RINA-CSM basic operational budget as defined above will be made available for ECCC activities, in accordance with Tables I and II, and may be assigned (by MC decision and following the route as detailed in paragraph 4) to (examples):
 - Data assessment (contribution for each assessment will be agreed case by case) Data generation by testing (besides and/or in addition to the NAC related mandatory testing)
 - Data collection
 - o FEA of components
 - ECCC data base of the creep values used for all the issued assessments,
 - Special projects (dedicated web site, lobby/scouting activity for EU funding, newsletter, WGs secretariat)
- C. External Contracts: For each technical work contract (e.g. data assessment, FEA, metallography, etc.) managed by RINA-CSM on behalf of the ECCC with external, non-JIP, organizations, RINA-CSM will retain 10% of the payment from JIP funds to cover administrative and management costs.

Table I: Some Examples on JIP ANNUAL Budget Share (all costs in k€). Hypothesis 1: online Spring and Autumn meetings

	HYPOTHESIS 1: ONLINE MEETINGS		
	18 – 24 participants		More than 24 participants
	Example for 18 participants	Example for 24 participants	Example for 30 participants
Fee per organization	2.5	2.5	2.5
Total Amount Collated to JIP	45	60	75
Basic RINA-CSM operational budget	39.5	39.5	39.5
Spring meeting	0	0	0
Autumn meeting	0	0	0
Funds available to ECCC	5.5	20.5	35.5

Table II: Some Examples on JIP ANNUAL Budget Share (all costs in k€). Hypothesis 2: Hybrid Spring and Autumn meetings

	HYPOTHESIS 2: HYBRID MEETINGS		
	18 – 24 participants		More than 24 participants
	Example for 18 participants	Example for 24 participants	Example for 30 participants
Fee per organization	2.5	2.5	2.5
Total Amount Collated to JIP	45	60	75
Basic RINA-CSM operational budget	39.5	39.5	39.5
Spring meeting	3	3	3
Autumn meeting	3	3	3
Funds available to ECCC	0	14.5	29.5

6.2 <u>Duration</u>

The JIP will last for three years. It will automatically be renewed for subsequent 3-year periods without change in the terms and conditions, unless the MC decides otherwise. The future of the JIP will be a major item to be discussed and determined at the final (third year) meeting of the MC.

7 JIP Set Up

After MC approval RINA-CSM will encourage JIP participations, by circulating:

- The ECCC invitation letter indicating:
 - RINA-CSM will be the Organizer of the Joint Industrial Programme,
 - $\circ\,$ The application form should be signed by the responsible person of each partner company
 - The confidentiality agreement has to be signed by each partner company
- RINA-CSM will then each year invoice the JIP fee, which will be payable upon invoice receipt for each calendar year, or by agreement with RINA-CSM.
- In case of technical work allocations to JIP Participants or external organizations RINA-CSM will issue an order accompanied by the ECCC technical specifications applicable.
- After completion of the technical work, including full reporting, and technical acceptance by the involved WG and Executive Committee RINA-CSM will require the issue of an invoice which will be paid in 90 days.

Legend

RINA-CSM: Rina Consulting - Centro Sviluppo Materiali, Italy Designated Secretariat: The company that has been accepted by the MC to operate as JIP coordinator and ECCC secretariat EC: European Commission ECCC: European Collaborative Creep Committee ESRSY/a: Equivalent Stress Rupture Specimen (test duration) Years per year EU: European Union EXEC: Executive Committee FEA – Finite Element Analysis HT: High Temperature JIP: Joint Industrial Project MC: Management Committee MoU: Memorandum of Understanding (ECCC's basic original agreement) NAC: National Annual Contribution (to ECCC) NCC: National Creep Committee (or Organisation or Group) WG: Working Group

Organisation: Any type of structure with an organized statute, including all types of companies (i.e. that is also a legal entity), like industrial companies, universities, research centres, utilities, etc., as well as the NCC or similar.

Nations are designated according to the EU two letter standard, for example:

AT: Austria, **BE:** Belgium CH: Switzerland CZ: Czech Republic DE: Germany DK: Denmark ES: Spain FI: Finland FR: France GR: Greece IT: Italy NL: The Netherlands PR: Portugal SE: Sweden SK: Slovakia SLO: Slovenia UK: United Kingdom JAP: Japan IN: India

Appendix 1

ECCC JIP 5 Application form 2025-2027

Rina Consulting - Centro Sviluppo Materiali SpA ECCC-JIP Secretariat Via di Castel Romano 100 I-00128 Roma Att.n: Ms. Maria Cristina Cesile maria.cesile@rina.org

Date:

The undersigned	by the present		
communication confirms the will	of the Company represented to join the initiative named "ECCC Joint		
Industrial Project", whose secret	riat is operated by Rina Consulting - Centro Sviluppo Materiali SpA		
(RINA-CSM).			
By this communication, RINA-CSM is also informed that for the undertaken activities and initiatives, the			
person designed by the Compan	to represent it in the above-mentioned initiative, is:		
Title Name	Surname		
Position in the Company			
Address	ZipCode		
Town	District/Province		
Phone Mobil	e-mail		

To support secretariat activities to be carried out by RINA-CSM during the Joint Industrial Project life, annual fee of 2.500 Eur² will be paid, within 30 days after the receipt of relevant invoiced, by bank transfer entitled to:

Rina Consulting - Centro Sviluppo Materiali SpA Bank: MONTE DEI PASCHI DI SIENA - Ag. ROMA 11, Piazza dei Navigatori, 1, I-00144 ROMA, IBAN IT3600103003211000000177845 <u>Causal</u>: ECCC JIP secretariat "Annual Contribution"

The invoices will be sent according to the following schedule:

- first invoice: after receiving the signed application form

- second invoice: January 2026

- third invoice: January 2027

For the invoice, please refer to the following data:

Heading /Name of the Company
Legal Office
Zip Code/Town/District
Vat Number:

Best Regards

Company Stamp

 $^{^{2}}$ + VAT if needed

Appendix 2 Amendments to the JIP 1 Description

JIP2 Amendment 1 – March 2015 – National Participation

A new category of National Participation in the ECCC JIP is defined: the "very small" country, with entitlement to access only open information within ECCC, including WG1 and MC, but not WG3.x. This may be made available, by MC agreement, to a Nation not able to meet the commitments of a "small" nation. This category includes:

- JRC Petten, which will pay no JIP fee, but will contribute 1 "C" in testing, e.g. small punch
- Switzerland, for which EMPA will take part in WG1

This is an addition to Section 4.1 – Rules – ECCC Membership: no material is deleted.

JIP2 Amendment 2 – March 2015 – Single Organisation Membership

Where there is no National Creep Group, membership may be made available to an individual organisation, from the European Continent, on the following basis (to be agreed by MC case-by-case):

• JIP fee PLUS testing to the value of 1 "C" each 4 years, i.e. equivalent to a "small nation". This would provide entitlement to attend one WG3.x group – as for a "small nation"

This is an addition to Section 4.1 – Rules – ECCC Membership: no material is deleted.