

# Terms of Reference for the NAFEMS Impact, Shock and Crash Working Group (ISCWG)

## 1 TECHNICAL AREA COVERED BY THE GROUP

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The NAFEMS Impact, Shock & Crash Working Group (ISCWG) is concerned with simulating high speed dynamic events such as impact, shock, drop testing, blast and ballistics. These events are typically short time duration events which are highly non-linear in nature. These events are frequently simulated using an explicit dynamic solution method. Computational approaches such as Lagrangian, Eulerian, Smooth Particle Hydrodynamics (SPH) as well as Single Degree of Freedom systems (SDOF) and the related technologies required whether for pre-processing (including meshing), solving or post-processing are within the scope of the ISCWG

## 2 AIMS

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To promote the safe, reliable and effective use of simulation techniques for modelling Impact, Shock and Crash events by:

1. Providing guidance and information for users of all levels.
2. Encouraging and supporting the increasing use of this technology within the international community.
3. To help both users and managers to apply these techniques appropriately and usefully.
4. To provide information for people using information from these simulations but who may not be performing simulations directly.

The focus of the group is on providing guidance information on the use of engineering analysis tools to engineers and scientists who design and analyse products, processes and events that operate or occur in highly dynamic environments.

## 3 STRUCTURE OF THE WORKING GROUP

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The members of the ISCWG are all experts in the area of Impact Shock & Crash (ISC) who contribute their time and knowledge on a voluntary basis. The outputs of the ISCWG are created by both current working group members and external experts from the wider community. Where an output is produced by an external expert, the ISCWG is responsible for ensuring that the output is technically accurate and relevant to the NAFEMS membership.

## 4 ISCWG BYLAWS

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### 4.1 ISCWG

- The number of members on the ISCWG should ideally range from between 10-20.

- Members of the ISCWG Working Group are listed on meeting minutes as present or sent apologies.
- If a member of the ISCWG does not contribute for more than 9 months, they will be warned that their membership of the working group may be terminated. An individual's membership of the ISCWG may be terminated after 12 months of non-contribution, at the discretion of the Chair.
- At the discretion of the ISCWG Chair, participation may be represented by one of two or three individuals from the member organization to reduce the workload on individuals.
- The ISCWG should aim to meet at least 6 times a year but not less than 3 times a year.
- The primary method of meeting will be via a web-based platform to enable international involvement in the group. The ISCWG is encouraged to take advantage of major NAFEMS or industry events to meet in person. Where a physical meeting is scheduled, attempts should be made to provide a web-based connection to the meeting to allow participation of those who are not able to attend the meeting in person.
- Minutes will be taken for all meetings and actions will be identified. The minutes should be circulated within a month (ideally less) of a meeting date.
- At least two-thirds of the entire ISCWG membership should have an active membership with NAFEMS.

#### 4.2 JOINING THE ISCWG

- Potential new members should submit a curriculum vitae to the NAFEMS Technical Working Group Manager (TWGM) indicating their knowledge and experience in the area of ISC.
- This submitted information will be reviewed by the current ISCWG members and if approved, the person will be invited to attend meetings and participate. It is expected that all ISCWG members hold a senior technical position and have significant expertise in the area of ISC.

#### 4.3 LEADERSHIP ROLES

- The position of ISCWG Chair is open for review every three years on the anniversary of the initial appointment. There is no requirement for the role to be rotated. Only current members of the ISCWG may vote. Only current ISCWG members can be nominated for the ISCWG Chair role.
- The Chair of the ISCWG should ideally be an industrial user of ISC technology.
- The Chair of the ISCWG can appoint a Vice-Chair at their discretion.

#### 4.4 DECISION MAKING

- Where a vote is required it will be carried out via email or a web based survey tool to the TWGM.
- Only current members of the ISCWG are allowed to vote. Each organisation that has a representative in the working group will have one vote. If an organisation has more than one person participating in the working group, the vote will be shared between the participants.
- If required, the casting vote will be held by the Chair.

#### 4.5 COMMUNICATION

ISCWG communication should be carried out using the relevant group email address. The current communication addresses can be found in Addendum 1.

It is the responsibility of the NAFEMS TWGM to ensure that the ISCWG email distribution list is current. Personal distribution lists are discouraged as they require constant updates.

## 5 RESOURCE REQUIREMENTS

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The ISCWG is administered by the NAFEMS Technical Working Group Manager (TWGM).

Logistical support for the group, consisting of providing a web-based meeting platform, scheduling meetings and web-hosting of working group output is provided by NAFEMS.

Funding is available from NAFEMS to support the development of working group outputs. This funding can take the form of contracts for authors, contracts for the individuals tasked with reviewing. Applications for funding should be made to the NAFEMS Technical Officer.

## 6 DURATION

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The ISCWG will continue in perpetuity until terminated by the NAFEMS CEO.

## 7 APPROVAL

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CEO, NAFEMS

Date

### Revision History

<u>Date</u>	<u>Revision</u>	<u>Description</u>	<u>Author</u>
07/10/2019	0	Initial Draft	Ian Symington
13/05/2021	1	Revised Draft	Ian Symington

# Addendum 1

## WORKING GROUP EMAIL ADDRESSES

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- ISCWG Email Address: [iscwg@nafems.org](mailto:iscwg@nafems.org)

## ROLES & RESPONSIBILITIES

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### **ISCWG Members**

Responsible for:

- identifying the outputs and directing the activities of the working group
- ensuring that ISC output is technically accurate and relevant to the NAFEMS membership
- regularly contributing to ISCWG activities. Contributions can include:
  - o attending and actively participating in working group meetings;
  - o participating in topic discussions and activities between meetings, whether individually or as part of a focus team;
  - o sending relevant comments or reports on agenda items to the Chair in good time for the meeting;
  - o volunteering for and carrying out actions arising from the meetings including developing outputs, reviewing ISC resources, authoring invitations to tender etc.

### **ISCWG Chair**

Responsible for:

- providing leadership to the ISCWG
- acting as the focal point for the ISCWG
- ensuring that meetings are run effectively.

### **ISCWG Vice Chair**

Responsible for:

- supporting the Chair of the ISCWG
- chairing the ISCWG in the absence of the Chair.

### **NAFEMS Technical Working Group Manager**

Responsible for:

- acting as the primary point of contact between the ISCWG and NAFEMS
- ISCWG meeting logistics, processing new member requests
- producing the minutes for ISCWG meetings

### **NAFEMS Technical Officer**

Responsible for:

- acting as the NAFEMS point of contact for ISCWG funding
- acting as the NAFEMS point of contact for approving ISCWG output

### **NAFEMS CEO**

Responsible for:

- providing the authority to terminate or request a change of scope for the ISCWG