



## **Terms of Reference for the NAFEMS Computational Structural Mechanics Working Group**

### **Technical Area Description**

The NAFEMS Computational Structural Mechanics Working Group (CSMWG) is concerned with the branch of engineering that uses numerical methods to calculate deformations, deflections, internal forces and stresses within structures. The group's remit includes linear statics; implicit and explicit dynamics (including impact and large deformation problems); elastic-plastic, creep, fatigue, limit analysis, shakedown, ratcheting, fracture and damage; contact, joints and connections; and structural materials models. The interests of the group overlap with many of the other working groups, including the Composites, CFD, Dynamics & Testing, and Manufacturing Process Simulation WGs, and areas of mutual interest are explored through joint activities.

The CSMWG is often the group that takes an interest in emerging methods that are appearing in software tools that are generally available to the engineering analysis community, and in new manufacturing and processing methods that affect structural response of materials and components. As a result, the group's area is constantly evolving to address new challenges.

The group undertakes a variety of activities, including preparation of "What Is..." guides to provide a high-level introduction to topics; commissioning of more in-depth publications to provide best practice guidance or state of the art reviews; identification of benchmark problems and preparation of challenge problems; and organisation of live events including webinars, seminars, and workshops for dissemination to, and discussion with, NAFEMS members.

### **Working Group Byelaws**

1. Members are listed on minutes as attending, contributing, apologies or no communication.
2. Contributions include:
  - a. attending and actively participating in working group meetings,
  - b. sending relevant comments or reports on agenda items to the chairman in good time for the meeting,
  - c. volunteering for and carrying out actions arising from the meetings,
  - d. significantly participating in discussions or other activities on the working group collaboration tools.
  - e. carrying out reviews of journal papers or other documents relevant to the CSMWG
3. If a member does not contribute for more than 9 months, they will be warned their membership of the working group may be terminated. This will happen after 12 months of non-contribution at the discretion of the chairman.



4. Potential new members should submit a CV to the chairman indicating their knowledge and experience of industrial CSM. This will be reviewed by the group and if approved the person will be invited to attend meetings and participate in the group.
5. At least two thirds of the working group membership shall be associated with current NAFEMS member organisations. A check on the consistency of the working group will be made following submission of the NAFEMS annual report. The working group aim to review their membership on an annual basis to ensure that Industry, Vendor and Academic are adequately represented on the working group.
6. At the discretion of the chairman, participation in the working group can be split between up to three people from the same organisation to reduce the individual workload.
7. The position of chairman 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 full members of the working group may vote or be nominated as chairman.
8. The chairman should aim to circulate an agenda to the working group a minimum of one week prior to the upcoming meeting
9. The working group should aim to meet a minimum of four times per year
10. Minutes will be taken for all meetings and actions identified by a scribe selected from the working group.
11. If a member is unable to attend a meeting, they may send a colleague in their place to make their contributions. That person would be recorded as a visitor unless the usual membership process was followed.