

Industry Needs Survey

1. Start

The EASIT2 project partners would appreciate your participation in this survey to help ensure that the project outcomes meet the needs of the engineering industry.

Please be assured that all responses are strictly confidential.

Your participation is appreciated and we look forward to receiving your responses.

Thank you for your time!

Please click Next to begin.

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2. Your details

If any of your responses in this survey don't fit into the options provided, or you would like to provide more information, please make a note of the question number and add a comment at the end of the survey.

1. Your location

2. Age

3. Position

Technician/Designer

Engineer/Analyst

Senior Engineer

Project Manager

Director

Academic

Other (please specify)

4. Please state your specialised field of engineering analysis and simulation

5. Higher Education

Diploma/Bachelor's Degree

Masters Degree

PhD, Doctorate

Other (please specify)

6. How long have you been involved in computer-based engineering analysis and simulation?

Not directly involved in engineering analysis and simulation

Less than 1 year

1-5 years

5-20 years

Over 20 years

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7. Over the past 6 months, what percentage of your working time has been spent involved in computer-based engineering analysis and simulation?

8. How does your formal education relate to your engineering analysis and simulation activity?

Not applicable

Not at all

A little

Significantly

Fully

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3. Organisation details

Please provide responses for your whole organisation, if possible.

For very large and/or multi-national organisations and academic institutions this may not be possible. Please therefore provide responses from your personal viewpoint, which may be your location, sector or department.

Please note that no information will be published linking responses to any organisation.

9. Nature of organisation (tick all that apply)

- Manufacturing
- Design office/consultancy
- Contractor
- Utility/services supplier
- Research and development
- University/training provider
- Software developer/vendor
- Other (please specify)

10. Industry sector (tick all that apply)

- Energy
- Aerospace
- Land Transport
- Civil and Construction
- Consumer Goods
- Marine and Offshore
- General Industrial Goods
- Petrochemical and Process
- Defence
- Other (please specify)

11. Size of organisation

- 1-20 employees
- 21-50 employees
- 51-100 employees
- 101-250 employees
- 250-500 employees
- 500+ employees

12. Number of people using computer-based engineering analysis and simulation tools.

13. The software you use for engineering analysis and simulation is (tick all that apply, leave blank if don't know)

- commercially available
- commercially available (with in-house modifications)
- developed in-house
- developed externally/tailored to your needs
- open source
- Other (please specify)

14. Approximately what proportion of your analysis time is spent using CAD-embedded analysis software?

15. Regarding engineering analysis and simulation in your organisation (tick all that apply, leave blank if don't know)

- Analyses are performed in-house
- Analyses are performed for you by external experts and/or sub-consultants/subcontractors
- Your organisation provides analysis services acting as an external expert and/or sub-consultant/subcontractor

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16. Please rate the following issues in terms of how significant they are as a barrier to effective use of engineering analysis and simulation in your organisation.

	major barrier	significant barrier	slight barrier	no barrier
Recruitment of suitably qualified and experienced staff	jq	jq	jq	jq
Lack of analysis skills	jq	jq	jq	jq
Loss of skilled staff	jq	jq	jq	jq
Capture and re-use of experience	jq	jq	jq	jq
Little requirement or poor support for analysis within design standards	jq	jq	jq	jq
Inadequate computing or software resources	jq	jq	jq	jq
Infrequent use of software/non-intuitive software resources	jq	jq	jq	jq
Validation of analysis solutions	jq	jq	jq	jq
Other	jq	jq	jq	jq

If other, please specify

17. Please rate the following reasons why your organisation may fail to get the most out of engineering analysis and simulation software.

	major issue	common issue	occasional issue	not an issue
Difficult to use and understand	jq	jq	jq	jq
The skills needed for an analysis task are not defined	jq	jq	jq	jq
Poor access to high quality information or lack of a mentoring system	jq	jq	jq	jq
Lack of investment/time for training	jq	jq	jq	jq
No convenient, cost effective and relevant external training	jq	jq	jq	jq
Pressure of work	jq	jq	jq	jq
Other	jq	jq	jq	jq

If other, please specify

18. In your organisation, are the skills needed to perform different analysis tasks formally defined?

19. In your organisation, is there a system for recording staff skills in engineering analysis and simulation?

4. Existing system to record analyst skills at your organisation

20. Medium for your existing company record of analyst skills (tick all that apply).

- paper based
- company intranet
- external internet site
- commercially available software
- in-house developed software

Please state external internet site or software, if used (optional)

21. Number of skill levels (e.g. standard, advanced) in your existing company record of analyst skills.

22. How are an analyst's skills assessed before recording them on your organisation's system? (Tick all that apply)

- Self-assessment
- Internal assessment by manager/mentor
- External assessment of submitted/project work
- Written/computer-based examination
- Interview/oral examination
- Other (please specify)

5. Ideal generic system to define and record analyst skills

23. Do you think a system that defines analyst skills in your field of engineering analysis and provides links to appropriate training resources would be useful for your professional development or your organisation?

24. If you are aware of any systems for defining or recording analyst skills in your field of engineering analysis and simulation (except in your own organisation), please provide brief details here.

25. What would be your preferred medium for recording analyst skills?

	very useful	useful	quite useful	no use
Paper based	jn	jn	jn	jn
Secure website	jn	jn	jn	jn
Company intranet	jn	jn	jn	jn
Standalone software	jn	jn	jn	jn

26. How many skill levels (e.g. standard, advanced) would be the most appropriate?

27. Please rate the usefulness of the following assessment methods for achievement in each skill?

	very useful	useful	quite useful	no use
Self-assessment	jn	jn	jn	jn
Manager/mentor	jn	jn	jn	jn
On-line/computer-based test	jn	jn	jn	jn
External (paid) assessment of submitted work	jn	jn	jn	jn
External (paid) examination	jn	jn	jn	jn

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28. As part of the EASIT2 project it is proposed to build a framework of analysis skills around at least some of the following general areas.

Please rate the importance of these areas in your field of engineering analysis and simulation (leave out any areas that are not relevant to your field).

If you feel that any important analysis themes in your field have been omitted, please state these themes in the "Others" box below.

	Very important	Important	Minor importance	Not important
Finite element analysis	jq	jq	jq	jq
Computational fluid dynamics	jq	jq	jq	jq
Beams, membranes, plates and shells	jq	jq	jq	jq
Mechanics, elasticity, strength of materials	jq	jq	jq	jq
Fundamentals of flow, flow in porous media, heat & mass transfer	jq	jq	jq	jq
Materials modelling, characterisation and selection	jq	jq	jq	jq
Plasticity and collapse load	jq	jq	jq	jq
Creep and time-dependency	jq	jq	jq	jq
Thermo-mechanical behaviour, thermal	jq	jq	jq	jq
Fatigue and fracture	jq	jq	jq	jq
Optimisation	jq	jq	jq	jq
Stochastics, non-deterministic methods	jq	jq	jq	jq
Dynamics, vibration, seismic	jq	jq	jq	jq
Composite structures	jq	jq	jq	jq
Buckling and instability	jq	jq	jq	jq
Non-linear geometric effects (e.g. contact/friction, slender structures)	jq	jq	jq	jq
Multiscale analysis	jq	jq	jq	jq
Multi-physics analysis (e.g. fluid-structure or soil-structure interaction, structural-acoustic)	jq	jq	jq	jq
Electromagnetics	jq	jq	jq	jq
Noise and acoustics	jq	jq	jq	jq
Design codes, standards, limit states	jq	jq	jq	jq
Analysis and data management	jq	jq	jq	jq

Others (such as other analysis methods, multi-body simulation, process modelling, electrical, solver technology, etc.)

29. Rate the usefulness of the following learning methods in engineering analysis/simulation (rate only the methods for which you have experience):

	Very good	Good	Fair	Poor
Attendance at courses	jn	jn	jn	jn
Web-based formal learning	jn	jn	jn	jn
Web-based self-paced learning	jn	jn	jn	jn
Informal web-based self learning (e.g. Wikipedia, discussion forums, bulletin boards)	jn	jn	jn	jn
Private study	jn	jn	jn	jn
On-the-job learning/mentoring	jn	jn	jn	jn
Other	jn	jn	jn	jn

If other, please specify

6. Professional qualification in engineering analysis

30. Would a professional qualification as a skilled engineering analyst be useful for your professional development or to your organisation?

31. Do you think your organisation would find a professional qualification in engineering analysis and simulation useful for the following purposes?

	Highly likely	likely	unlikely
Company register/internal resource management	jn	jn	jn
Marketing purposes	jn	jn	jn
Incentive for staff development	jn	jn	jn
Recruitment	jn	jn	jn
Sub-consultant/subcontractor qualification	jn	jn	jn
Other	jn	jn	jn

If other, please specify

32. If there are any job functions or activities associated with engineering analysis in your organisation where a legal requirement exists or would be desirable for the employment of a formally qualified analyst, please provide a brief description.

33. Which do you think are suitable methods to assess an engineering analyst before awarding a professional qualification?

- Self-assessment
- Manager/mentor
- External assessment of submitted work
- External written/computer-based examination
- Professional interview/oral examination
- Other (please specify)

34. How much would you or your organisation be willing to pay for assessment and award of a professional qualification in engineering analysis and simulation (Euros)?

- Up to 50
- Up to 100
- Up to 200
- Up to 500
- Up to 1000

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7. Any comments?

35. In the comment box below you may provide any additional information or opinions that could not be expressed in the survey questions on the preceding pages. If referring to specific questions, please provide the question number.

36. In order to receive a free NAFEMS publication and to help avoid receiving reminder emails concerning this survey, please enter your email address below. Your email address will not be used for any other purpose.

Email Address:

37. This is the end of the questionnaire. Well done!

Please indicate whether you would be willing to be contacted later in the EASIT2 project to provide some evaluation of the project deliverables . If you select 'Yes', please ensure that your email address was entered in the previous question.