APPENDIX A: STAGE-ONE EXPERT CONSULTATION QUESTIONS

Purpose and status

The first-stage consultation was designed to elicit reflective accounts of how practitioner reasoning, scientific understanding, judgement, autonomy, and professional capability develop across practice. Contributors were not asked to write the IQF level descriptors, validate particular tasks, endorse the philosophical position of the IUSCA, or contribute to a consensus statement.

The wording below reproduces the questions and response prompts presented to contributors, with minor changes to formatting only. Administrative details concerning the survey deadline, estimated completion time, online survey link, and submission process have been omitted.

Levels 1–2, 4, 6, and 8 were used as developmental anchor points to help contributors distinguish broad changes across entry-level, developing, independent, and expert practice. The complete Level 1–8 descriptors were subsequently developed through synthesis and the second-stage consultation.

Instructions provided to contributors

Contributors were asked to:

- Read all questions before responding and allow time for reflection;
- Draw on their own development and observations of other practitioners;
- Focus on reasoning, mechanisms, adaptation, and judgement rather than tasks or techniques;
- Identify errors, assumptions, and experiences that had changed their thinking;
- Use specific, experience-informed examples rather than textbook responses; and
- Submit honest and considered responses without concern for polished writing.

Consultation questions

First Principles, Outcome-Led, and Adaptation-Focused Thinking

Q1. In your own words, how would you describe:

- First-principles reasoning
- Outcome-led practice
- Adaptation-focused decision-making

Short, concrete descriptions were requested.

Q2. Provide one example where first-principles thinking genuinely changed your approach.

- What assumption you revised
- What mechanism caused the shift
- What you stopped doing
- What you started doing

Q3. Beyond physiology, biomechanics, and motor learning, what other fundamental sciences or knowledge domains influence high-quality reasoning in S&C?

Up to five domains, with short explanations, were requested.

Q4. What is one belief, assumption, or approach you held for too long that turned out to be wrong, and what triggered the change?

Developmental Progression

Entry Level (Levels 1–2)

Q5. What characterises reasoning and scientific understanding at entry level?

Contributors were asked to consider misconceptions, common errors, reasoning patterns, and limits in autonomy.

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Q6. What is the most predictable reasoning mistake early practitioners make, and why does it matter?
Developing Competence (Level 4)

Q7. What shifts in reasoning or autonomy indicate that someone is progressing beyond entry level?
Independent Practitioner (Level 6)

Q8. What thinking qualities define someone who can operate independently and consistently?
Contributors were asked to consider rationale quality, the ability to diagnose mismatches, and judgement under uncertainty.

Q9. What can a Level 6 practitioner do consistently, in reasoning or judgement, that a Level 4 practitioner cannot?

Expert or Leading Practitioner (Level 8)

Q10. What distinguishes expert-level reasoning and scientific judgement?

Q11. What is one insight an expert at Level 8 consistently recognises that others overlook?
Domain-Specific Reasoning

Q12. For one or two domains in which you feel confident, describe how reasoning differs across Levels 1–2, 4, 6, and 8.

- Mechanisms
- Prioritisation
- Interpretation of evidence
- Decision-making
- Use of monitoring
- Risk assessment

Example domains provided were strength, power, energy system development, speed, monitoring, return to play, and programme design.

Distinguishing Features

Q13. What are the three to five most reliable markers that distinguish:

- Competent from proficient practice
- Proficient from expert practice

Suggested markers included reasoning quality, autonomy, scientific literacy, pattern recognition, and the ability to teach others' thinking.

Critical Exposures and Field-Level Insights

Q14. Identify one commonly accepted belief or practice in S&C that is incomplete, outdated, or misapplied, and explain the real mechanism people are missing.

Q15. What are the biggest developmental bottlenecks when practitioners move from:

- Level 1 to Level 4
- Level 4 to Level 6
- Level 6 to Level 8

Q16. If the IQF included only three things, what must they be for it to be credible and future-proof?

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