



AR Training Scenarios and Exercises

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1. Introduction

1.1 Purpose of this document

This document is the deliverable of WP4/T2, AR Training Scenarios and Exercises. Its purpose is to specify, in a form that can be read and verified without access to any software platform, the augmented-reality training scenarios developed within INSPIRE for the training of welding inspectors working on hydrogen pipelines.

The scenarios were authored and delivered on an assisted-reality platform running on monocular head-mounted devices. That platform, and the procedure for installing and operating it, is documented separately in the INSPIRE deliverable "Software installation and usage guide". The present document does not repeat that material: it documents what was built with it.

The distinction matters for two reasons. First, a scenario that exists only inside a software platform cannot be reviewed, audited or reused. A reader cannot open it, an evaluator cannot verify that it exists, and another VET centre cannot reproduce it. Second, the platform will change and may eventually be replaced, whereas the training content (the sequence of inspection steps, the acceptance criteria, the specimens and the decisions the learner has to make) has a longer useful life than any software. This document therefore records the scenarios in platform-independent form.

1.2 Scope

The document covers the following:

1. The design principles applied to all INSPIRE AR scenarios, and the reasons for the particular inspection tasks chosen.
2. A full specification of each scenario: identification, learning outcomes, specimens, step sequence, step results, learner inputs and the evidence each execution produces.
3. The exercises and assessment material associated with the scenarios, and the limits of their use in assessment.
4. The evidence that demonstrates the scenarios were implemented and delivered, and where that evidence is held.



5. The functional requirements a different platform would have to meet in order to reproduce these scenarios.

The following are outside the scope of this document and are covered elsewhere: installation and operation of the delivery platform, in the Software installation and usage guide; the results and evaluation of the pilot delivery; the technical content of the competence units themselves, which is defined in the WP3 training material; and guidance for VET centres wishing to introduce AR generally, which is the subject of the Guide for the Implementation of AR-Based Training in VET Centres.

1.3 Development and delivery environment

The scenarios were produced and delivered using the following arrangement. It is described here so that the specifications in Sections 4 to 6 can be understood, not as a recommendation of any particular product.

Authoring was carried out in a web-based procedure authoring environment, in which a scenario is expressed as a Procedure Definition containing ordered Steps, with media, selectable results and learner inputs attached to each step.

Delivery was on a monocular assisted-reality head-mounted device, operated entirely hands-free by voice command, so that the learner keeps both hands on the inspection task.

A remote mentoring module was used in parallel, allowing a trainer to see the learner's first-person view and to intervene, and allowing additional trainees to observe the same view.

Each execution of a scenario was recorded automatically by the platform, producing a step-by-step log of results chosen, inputs given, notes attached and time spent.

Authoring uses a two-stage release process: a procedure is drafted, then reviewed, then approved, and only then becomes visible on the devices. All scenarios described in this document were taken through that process to Released status. This is significant for evidence purposes, because the released version is fixed and identifiable, and every execution is recorded against it.



2. Design of the INSPIRE AR Scenarios

2.1 Scenario architecture

Every scenario in this document is built from the same set of elements. Understanding them is necessary to read the specifications that follow, and they also form the basis of the portability requirements in Section 9.

Procedure: a named, versioned unit of training content with a defined status. A released procedure is read-only and is the object against which executions are recorded.

Step: an ordered instruction within a procedure, carrying a short name, a description of the action to be performed, and an optional estimated time.

Media: one or more images or video clips attached to a step, displayed on the device either as a thumbnail or full screen. In inspection scenarios this is where reference images and acceptance criteria are placed.

Step result: a defined set of outcomes the learner selects at the end of a step, each with a follow-on action: continue to the next step, jump to a named step, or finish. This is the mechanism that makes a scenario a decision exercise rather than a linear reading task.

Input: a value the learner must supply during a step, as dictated text, a number, or a choice from a list. Inputs are what turn an observation into a recorded measurement.

Expression: a rule evaluated against an input that pre-selects a step result, which the learner can override. This is how an acceptance criterion is enforced in the scenario: the learner enters a measured value and the scenario proposes accept or reject.

Note: a comment, photograph or video the learner attaches to a step during execution. Notes are the learner's own record and are the main source of qualitative evidence.

Asset: an identifier for the physical object being inspected, selected at the start of an execution, so that a record refers to a specific weld specimen rather than to the task in general.



2.2 Selection of inspection tasks

The tasks documented here were not chosen because they were the most impressive to demonstrate, but because they satisfy a set of practical conditions. The same conditions are recommended to any centre selecting its own tasks.

The task is performed on cooled material, away from any live arc. A head-mounted display is not eye protection and must not be used in an arc-flash zone; choosing tasks performed after welding removes that hazard entirely.

The learner is stationary at a bench. Walking through a workshop while wearing a device that narrows the field of view is a hazard; a bench task is not.

Both of the learner's hands are occupied with real tools (a gauge, a magnifier, a spray can, a cloth. This is precisely the situation in which hands-free guidance adds something that a printed procedure cannot.

The task is procedure-driven and, in the case of penetrant testing, time-dependent, so that the most common failure is a sequencing or timing error rather than a lack of manual skill. Guided sequencing addresses exactly that failure mode.

The outcome is assessable against a written acceptance criterion, so the learner has to reach a defensible verdict rather than simply complete a sequence.

Tasks that were deliberately not implemented, for reasons that are equally instructive: any activity involving a live arc; radiographic testing, which takes place in a controlled area; and any work in an area classified for explosive atmospheres, because the devices used carry no ATEX certification.

2.3 Relationship to the competence units

The scenarios support the two INSPIRE competence units. Health and safety content relates to CU-H2-01, on hydrogen material integrity and safety. The visual and penetrant testing scenarios relate to CU-H2-02, on inspection and testing for hydrogen pipelines, and specifically to the parts of it concerned with method selection, surface examination and the application of acceptance criteria.

The scenarios do not attempt to cover a competence unit in full. Each one addresses a defined subset of learning outcomes, stated explicitly in Sections 4 to 6, and is intended to be delivered as part of a blended sequence in which the theory is taught conventionally and the physical practice is performed on real specimens.



2.4 Role in assessment

The scenarios are formative. They give the learner immediate feedback on whether a sequence was followed correctly and whether a verdict matches the acceptance criterion, and they give the trainer a record of both. They are not a substitute for the examinations and practical demonstrations required by the qualification.

This limit is not a matter of preference. Under the IIW and EWF systems, and for personnel certification under standards such as ISO 9712:2021, the assessment requirements are set by the awarding framework and not by the training centre. No centre may replace a required examination element with an AR execution without the prior agreement of its Authorised National Body. Within that limit, execution records may be used as supporting evidence of practice, and are useful for that purpose.

A further caution applies to the data the platform records. Time spent on a step is recorded automatically and is tempting to use as a performance measure, but speed is a poor proxy for inspection quality and rewarding it would encourage exactly the wrong behaviour. The times recorded in these scenarios are intended for planning and for identifying steps that learners find difficult, not for grading.

3. Scenario Catalogue

Five scenarios were developed, grouped into three families. The WP4/T2 target was two AR scenarios, so the delivered set exceeds the planned output. The counts below should be read together with the note on approximate figures in Section 3.1.

SC-01, health and safety induction, delivered as three short procedures: personal protective equipment and personal preparation; workshop hazards and emergency provisions; and safe use of the head-mounted device itself. No weld specimen is required.

SC-02, visual testing of welds, delivered as one procedure applied in turn to five weld specimens, each registered in the platform as a separate asset so that results are recorded per specimen.

SC-03, penetrant testing, delivered as one procedure applied to a single circumferential weld on pipe.



3.1 Note on the figures given in this document

The numbers of procedures and specimens stated above and in Sections 4 to 6 are as recalled at the time of drafting and must be reconciled against the platform before this document is issued. The authoritative source is the list of Procedure Definitions in Released status, together with the Asset list and the Operation Execution Reports. Section 8 explains how to extract that information. The same applies to the step sequences: those given here were drafted from the applicable inspection standards and from the delivered training, and must be checked line by line against the released procedures.

4. Scenario SC-01 — Health and Safety Induction

4.1 Identification

Scenario reference: SC-01, comprising three procedures: SC-01.1, SC-01.2 and SC-01.3.

Competence unit: CU-H2-01, hydrogen material integrity and safety.

Target group: welding inspectors and trainees entering the training workshop for the first time, and any learner about to use a head-mounted device.

Indicative duration: approximately 3 to 5 minutes per procedure.

Specimens required: none. The scenario is performed in the workshop itself, using the real equipment, signage and emergency provisions.

Delivery: monocular assisted-reality head-mounted device, hands-free.

4.2 Learning outcomes

On completing SC-01 the learner is able to:

- Identify the personal protective equipment required in the training workshop and confirm that their own equipment is complete and serviceable.
- Locate the emergency provisions of the workshop — exits, alarm points, first aid, eyewash, extinguishers — without prompting.



- State the hazards present in the area and the control applicable to each.
- Use a head-mounted device safely, including the situations in which it must not be worn.

4.3 Step sequence

SC-01.1, personal protective equipment and personal preparation:

- Confirm that the learner is fit to take part and has no condition that makes use of a head-mounted display inadvisable. Result: proceed or refer to the trainer.
- Identify and put on the required PPE item by item, each item forming one step with a reference image: safety footwear, protective clothing, eye protection, gloves, hearing protection where applicable.
- Confirm each item is serviceable and correctly fitted. Result: accept or replace.
- Confirm compatibility of the head-mounted device with the PPE worn, in particular eye protection and any helmet.

SC-01.2, workshop hazards and emergency provisions:

- Locate and confirm the nearest emergency exit and the route to it.
- Locate the alarm activation point, the first aid station, the eyewash station and the fire extinguishers appropriate to the area.
- Identify the hazards present in each zone of the workshop, one step per zone, with the applicable control stated in the step description and the learner confirming that the control is in place.
- Identify the point at which hot work is in progress and the separation to be maintained from it.
- State the action to be taken on hearing the alarm, and confirm the muster point.

SC-01.3, safe use of the head-mounted device:

- Fit and adjust the device, verifying that the display does not obstruct the view of the work area.
- Confirm the rule that the device is not eye protection and must never be worn in place of a welding filter or within the arc-flash zone.
- Confirm that the device is not to be worn while walking through the workshop, carrying loads, on stairs or platforms, or near moving machinery.



- Confirm the procedure for removing the device immediately, and that the evacuation route is known without reference to the display.
- Confirm the reporting of discomfort (eye strain, headache, neck discomfort, nausea) and that stopping carries no consequence for assessment.
-

4.4 Step results and evidence captured

Each step uses a simple two-way or three-way result: accept, reject, or not applicable. A result of "not confirmed" is configured to require a note, so that the learner records what was missing. The execution record therefore shows not only that the induction was completed but which items were found deficient, which is useful as a workshop condition check in its own right.

4.5 Trainer notes

This family of scenarios was the most straightforward to author and deliver, because it involves no measurement and no acceptance criterion. It is the recommended starting point for a centre implementing AR for the first time.

The scenario should be re-authored for each centre, because the hazards, the layout and the emergency provisions are specific to the workshop. Only the structure transfers.

Delivering the induction through the device has a secondary benefit: it familiarises the learner with the device on a task where nothing depends on getting it right, before it is used for an inspection scenario.

5. Scenario SC-02 / Visual Testing of Welds

5.1 Identification

Scenario reference: SC-02, one procedure applied to five weld specimens.

Competence unit: CU-H2-02, inspection and testing for hydrogen pipelines.

Target group: welding inspectors and trainees who are already qualified in visual testing and are extending their practice to hydrogen service.

Indicative duration: approximately 5 to 7 minutes per specimen.



Specimens required: five welds, each registered as a separate asset in the platform.

Equipment required: welding gauge set, magnifier, illumination meeting the requirements of the applicable standard, straight edge, marker.

Reference standards: EN ISO 17637 for the examination method; the acceptance criteria of EN ISO 5817 at the quality level specified for the exercise, together with the hydrogen-specific considerations taught in CU-H2-02.

5.2 Learning outcomes

On completing SC-02 the learner is able to:

- Verify that the conditions for a valid visual examination are met before starting: surface condition, access, illumination and viewing angle.
- Carry out a systematic surface examination of a weld in the correct sequence, without omitting a feature.
- Identify and name surface imperfections using standard terminology.
- Measure the relevant dimensions of an imperfection and compare them with the specified acceptance criterion.
- Reach and record a defensible accept or reject verdict, and state the ground for it.
- Recognise which surface imperfections carry additional significance in hydrogen service.

5.3 Specimens

Five welds are used, presented to the learner in a fixed order and identified in the platform as separate assets so that each verdict is recorded against a specific specimen. The set is designed so that the learner meets a range of outcomes rather than a series of rejects: at least one specimen should be acceptable, at least one should be clearly rejectable, and at least one should be marginal so that the verdict depends on a measurement rather than on appearance.

For each specimen the following is recorded in this document and on a physical label attached to the specimen:

- Specimen identifier, matching the asset name in the platform.
- Joint type, parent material and welding process.



- Nominal dimensions relevant to the acceptance criterion, in particular material thickness.
- The imperfections deliberately present, with their nominal size.
- The expected verdict at the quality level applied, and the criterion that governs it.

The completed specimen register is held with the specimens themselves and is reproduced in Annex A. It is the single most important piece of evidence for this scenario, because without it the recorded verdicts cannot be checked.

5.4 Step sequence

The procedure follows the examination sequence of EN ISO 17637. Steps that require the learner to enter a measured value are marked as such.

- Select the specimen: The learner selects the asset corresponding to the physical specimen in front of them, so that everything recorded thereafter is attributed to it.
- Verify the examination conditions: surface accessible and free of anything that would obscure an imperfection, illumination adequate, viewing distance and angle within the limits of the standard. Result: conditions met or not met, with a note required if not met.
- Examine the weld surface and the immediately adjacent parent material, in the stated sequence, for cracks. Result: none detected, or detected with a note and photograph.
- Examine for surface porosity and for exposed slag or other inclusions.
- Examine the weld toes for undercut. Where undercut is present, measure its depth and enter the value. An expression compares the value with the acceptance limit and pre-selects the verdict.
- Assess excess weld metal and, where applicable, excess penetration, entering the measured height.
- Assess linear misalignment across the joint, entering the measured offset.
- Assess the weld width and its uniformity, and the profile transition at the toes.
- Examine for incompletely filled groove, overlap, spatter, arc strikes and grinding damage.
- Compare every recorded observation with the acceptance criteria displayed in the step media, and reach the overall verdict. Result: accept, reject, or refer for further examination by another method.



- Record the verdict with its justification as a dictated note, and photograph the feature that governed the decision.
- Confirm what the verdict would be if the same weld were in hydrogen service rather than in conventional service, and state the reason for any difference. This step carries the hydrogen-specific learning of the scenario.

5.5 Step results, inputs and expressions

The scenario relies on three mechanisms working together, and it is worth stating how, because this is what distinguishes a guided inspection exercise from a checklist.

Step results: Steps concerned with detection use a simple result: detected or not detected, with a note and photograph required when something is detected. This forces the learner to record the evidence for their own observation.

Inputs: Steps concerned with sizing require a numeric input in millimetres. The value entered becomes part of the permanent record of the execution, so a trainer can later see not only the verdict but the measurement it rested on.

Expressions: Where an acceptance limit applies, an expression compares the entered value with the limit and pre-selects accept or reject. The learner can override the proposal, and an override is recorded. This is deliberate: the exercise is about reaching a judgement against a criterion, and a learner who overrides the automatic proposal has to be able to say why.

5.6 Trainer notes

The scenario works best when the learner has both hands on the gauge. If the device is used only to read text, a printed procedure would do the same job; the value is in the guidance staying visible while the hands are busy.

The acceptance criteria should be placed in the step media as an image, not dictated into the step description. Learners refer back to them repeatedly and need to be able to call them up.

The marginal specimen is the most instructive of the five and generates the most discussion afterwards. It should not be omitted when the exercise is shortened.



Expect the first execution by any learner to take considerably longer than the indicative duration. The recorded time per step is useful for identifying which steps the group finds difficult.

6. Scenario SC-03. Penetrant Testing of a Circumferential Weld

6.1 Identification

Scenario reference: SC-03, one procedure applied to one circumferential weld on pipe.

Competence unit: CU-H2-02, inspection and testing for hydrogen pipelines.

Target group: welding inspectors and trainees extending their practice to hydrogen service.

Indicative duration: approximately 7 to 10 minutes, governed by the dwell and development times of the products used.

Specimens required: one circumferential weld on pipe, registered as an asset in the platform.

Consumables and equipment: penetrant, remover or cleaner and developer of a compatible family; lint-free cloths; illumination appropriate to the penetrant type; timer; personal protective equipment appropriate to the products used, and adequate ventilation.

Reference standards: EN ISO 3452-1 for the method; the acceptance levels of EN ISO 23277 for the evaluation of indications.

6.2 Learning outcomes

On completing SC-03 the learner is able to:

- Prepare a weld surface correctly for penetrant examination and judge when the preparation is adequate.
- Apply the penetrant process in the correct sequence and observe the dwell, removal and development times required by the product and the standard.



- Distinguish a relevant indication from a false or non-relevant indication.
- Classify an indication by type and size and evaluate it against the specified acceptance level.
- Record the examination in a form that satisfies the reporting requirements of the standard.
- Explain why timing errors in this method produce both false acceptance and false rejection, and why that matters in hydrogen service.

6.3 Step sequence

The procedure follows EN ISO 3452-1. Timed steps are the reason this task was selected for AR delivery: the guidance holds the learner at each stage for the required time, which is the step most often shortened in practice.

- Select the specimen and confirm the examination conditions: surface temperature within the range permitted for the products, ventilation adequate, PPE worn.
- Pre-clean the weld and the adjacent surface, removing scale, oil, grease, paint and any residue that would block a penetrant from entering a discontinuity. Result: clean or repeat.
- Dry the surface completely and confirm that drying is complete before proceeding.
- Apply the penetrant to the full area to be examined, ensuring complete coverage.
- Observe the dwell time. The step displays the time required by the product and the learner confirms completion; the elapsed time is recorded in the execution log.
- Remove the excess penetrant by the method appropriate to the penetrant type, without over-removal. Result: removal adequate, insufficient, or excessive, with a note where not adequate.
- Dry the surface by the permitted method and confirm completion.
- Apply the developer evenly and in a thin layer.
- Observe the development time, again displayed and recorded.
- Examine the surface under the illumination appropriate to the penetrant type, in the sequence given, and identify every indication.
- For each indication, classify it as relevant or non-relevant, and record the reason. Non-relevant indications arising from the specimen geometry are deliberately present.



- For each relevant indication, classify it as linear or non-linear, measure its dimensions and enter the values. An expression compares them with the acceptance level and pre-selects the verdict.
- Reach the overall verdict for the weld and record it with its justification and a photograph of the indication that governed it.
- Post-clean the specimen and confirm that it has been returned to a condition suitable for storage or further examination.
- Confirm the content of the examination report required by the standard, itemising what must be recorded.

6.4 Step results, inputs and expressions

The timing steps use a confirmation result with the required interval stated in the step description; the platform records the actual elapsed time, so a trainer can see whether the interval was respected. The indication steps use numeric inputs for length and width, with expressions applying the acceptance level. Photographs are required for every relevant indication, which produces a visual record of the learner's interpretation that can be reviewed afterwards and compared with the trainer's own.

6.5 Trainer notes

This is the scenario in which AR delivery adds most, because the failure mode it addresses (shortening a dwell or development time) is invisible in the finished result and is not corrected by manual skill.

Include at least one non-relevant indication arising from geometry. Learners who have only seen relevant indications tend to reject everything.

The consumables consumed per learner are the principal cost of this scenario and are also the clearest measure of the material saving achieved when part of the practice is moved to guided repetition on the same specimen.

The circumferential geometry is deliberate: it is the geometry the learner will meet on a pipeline, and it constrains access and viewing angle in a way that a flat plate does not.



7. Exercises and Assessment Materials

Each scenario is delivered inside a short teaching sequence rather than on its own. The following material accompanies the scenarios and is held with them.

Pre-session knowledge check: a short set of questions covering the method, the applicable standard and the acceptance criteria, answered before the learner touches the device. Its purpose is to establish that the learner is ready to practise, not to grade them.

In-scenario decisions: the decisions the learner makes during execution are themselves the principal exercise. They are recorded automatically and reviewed afterwards with the trainer.

Written justification: after execution, the learner writes a short justification of the verdict reached on each specimen, citing the criterion applied. This is where the reasoning is assessed, rather than in the scenario itself.

Trainer observation sheet: a single sheet on which the trainer records what was observed during execution that the platform does not capture: handling of equipment, sequence discipline, response to an unexpected finding.

Debrief: a short discussion comparing the learner's recorded verdicts with the specimen register, including any override of an automatically proposed result.

None of this material certifies competence. It prepares the learner for the formal assessment defined by the qualification and provides evidence of practice, as set out in Section 2.4.

8. Evidence of Implementation

This section addresses the question that gave rise to the present document: how the existence and delivery of the scenarios can be demonstrated to a reviewer, an evaluator or an auditor who has no access to the platform.

Seven artefacts together constitute that evidence. Each can be produced as a file and archived independently of the platform.

The released procedure definitions: exported or printed from the authoring environment for each scenario, showing the name, version, Released status, category



and the full ordered list of steps with their descriptions, results, inputs and media count. This is the definitive statement of what was built.

The release history: a record of the review and approval of each procedure, with dates. This demonstrates that the scenarios went through a controlled release rather than being drafts.

The operation execution reports: one per delivery, listing the device user, the specimen, start and end time, the number of steps executed, and for each step the result chosen, the input given, the time spent and whether a note was attached. This is the strongest single piece of evidence, because it shows the scenarios were not only authored but used.

Step-level screenshots: a screen capture of each step as the learner sees it on the device. These are what make the scenario comprehensible to a reader who has never worn the device.

Specimen photographs and register: photographs of each weld specimen with its identifier visible, together with the completed specimen register from Annex A. Without these the recorded verdicts cannot be verified.

Recordings of execution: first-person recordings of a complete execution of each scenario, produced either by the platform's own capture function or by screen recording. One per scenario is sufficient.

Learner and trainer output: the notes, photographs and dictated justifications attached by learners during execution, and the completed observation sheets and written justifications from Section 7.

The present document is the eighth artefact and the one that binds the others together: it is the human-readable definition of each scenario, against which the exported material can be checked.

8.1 Retention and data protection

Execution records identify individual learners and therefore constitute personal data. Before this evidence is archived or shared, three things must be settled: the lawful basis for retaining it, the retention period after which it is deleted, and whether it is shared in identifiable or anonymised form. For dissemination purposes, execution records should be anonymised by replacing device usernames with a code, and recordings should be reviewed for incidental capture of people who did not consent



to being filmed. Screenshots and specimen photographs carry no such constraint and are the material best suited to publication.

9. Reproducing the Scenarios on Another Platform

The scenarios described here are specified in terms of steps, media, results and inputs rather than in terms of any product, so that a centre using a different toolset can implement the same training. A platform capable of delivering them must provide the following functions. The list can be used directly as a procurement requirement.

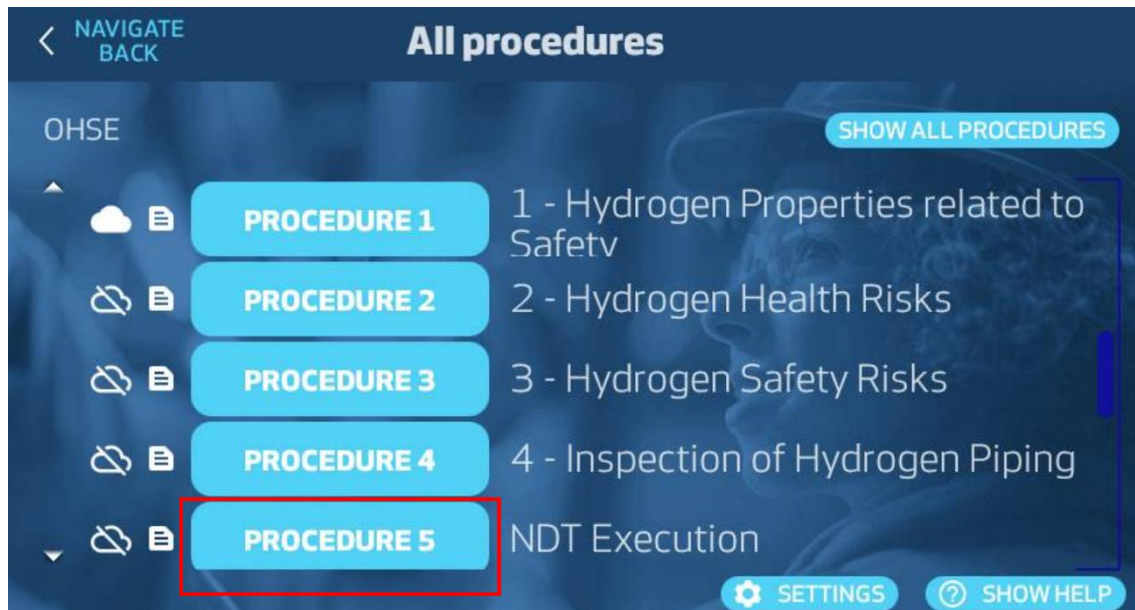
- Ordered steps within a named, versioned procedure, with a status that distinguishes a draft from a released version.
- One or more images or video clips attachable to each step and callable on demand, since acceptance criteria are consulted repeatedly.
- A defined set of selectable outcomes per step, each able to continue, branch to a named step, or finish, and each able to require a comment, photograph or video before the learner may proceed.
- Numeric and free-text input per step, recorded as part of the execution.
- A rule mechanism that compares an entered value with a limit and proposes an outcome, with the learner able to override and the override recorded.
- Identification of the physical object being examined, so that results attach to a specimen rather than to the task.
- Note capture during execution, including photograph and video, from the device itself.
- An exportable execution log containing user, specimen, timestamps, per-step result, input, elapsed time and attached notes.
- Hands-free operation, so that the learner can hold gauges and tools.
- Tolerance of degraded connectivity, since workshop coverage is unreliable.

Two of these deserve emphasis because they are frequently absent. The first is the exportable execution log: without it there is no evidence of delivery, only an assertion. The second is the ability to require a photograph before the learner may continue, which is what turns a checklist into a record of observation.

To migrate the scenarios rather than re-author them, the following should be exported from the present platform while access to it is available: the full procedure definitions including step text; all media files with their step associations; the step result and template definitions; the asset list; and the historical execution reports.



Annex B is a checklist for that export. It should be carried out now rather than at the point when access is about to be lost.



10. Conclusion

The INSPIRE AR Training Scenarios and Exercises translate the project's competence-based approach into practical learning activities for hydrogen pipeline welding inspection. Linked to the INSPIRE Competence Units, the scenarios combine AR-supported guidance with practical inspection tasks, real specimens and structured learner decision-making.

By documenting the scenarios independently from the technology used for their delivery, this result also supports their future adaptation and reuse by VET providers using different AR solutions. Overall, the scenarios provide a practical complement to the theoretical training materials developed within INSPIRE and support a more digital, flexible and practice-oriented approach to welding inspection training.