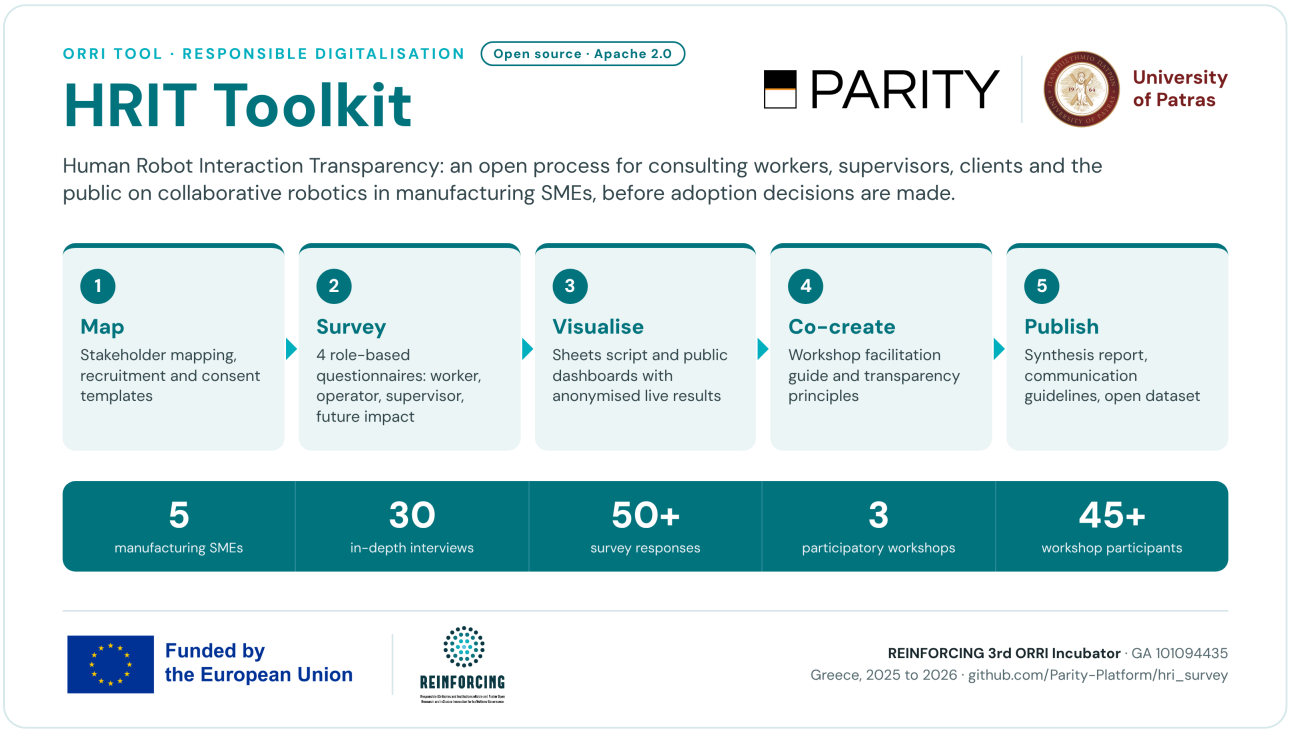
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HRIT Toolkit

Human Robot Interaction Transparency: open method, templates and instruments for consulting workers, supervisors, clients and the public on collaborative robotics in manufacturing SMEs, before adoption decisions are made.



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Licence, citation and funding

The toolkit is maintained in the open repository. This PDF is the version 1.0 snapshot delivered to REINFORCING. Templates contain fields in square brackets for local details, to be completed by each organisation that reuses them.

1. About the toolkit and the five-step method

The HRIT Toolkit is an ORRI tool for organisations that plan to introduce collaborative robots or other automation and want the people affected to inform the decision. It packages the process tested in the HRIT project with five manufacturing SMEs in Greece into reusable steps, templates and data structures.

The toolkit is neutral on adoption. Its output is a documented, public record of how workers, operators, supervisors, clients and the local community perceive the change, and how that input was used.

Intended users

- SME owners, production and HR managers preparing an automation decision
- Line supervisors and team leaders who will manage mixed human and robot teams
- Worker associations and employee representatives
- Industry associations and vocational training centres
- Regional and national policymakers working on the future of work
- Researchers studying HRI acceptance, who need comparable instruments and data

Components

File	Purpose
01_synthesis_report.md	Findings from 30 interviews, 50+ surveys and 3 workshops; co-created transparency and engagement principles
02_stakeholder_map_and_recruitment.md	Stakeholder map, recruitment plan, invitation texts
03_information_sheet_and_consent_form.md	GDPR-aligned participant information sheet and consent form
04_interview_guide.md	Semi-structured interview guide per stakeholder group
05_workshop_facilitation_guide.md	Agenda, roles and inclusive facilitation methods for participatory workshops
06_communication_guidelines.md	Rules and message templates for communicating HRI changes, including job displacement and retraining
07_supervisor_briefing_pack.md	Briefing pack that prepares supervisors before workers are engaged
08_data_and_anonymisation.md	Data dictionary overview, anonymisation protocol, publication and reuse rules
hrit_data_schema.json	Machine-readable schema of all four questionnaires (79 fields)
participant_register_template.csv	Participant register with inclusivity tracking columns

The four questionnaires are in the repository root folders. Live dashboards are linked in the root README.

The five-step method

Step	What happens	Files	Reference duration in HRIT
1. Map	Identify stakeholder groups, set representation targets, recruit participants, collect consent	02, 03, register CSV	2 months
2. Survey	Run the role-based questionnaires and in-depth interviews	Questionnaire folders, 04	3 months, overlapping step 1
3. Visualise	Connect responses to the spreadsheet script and publish anonymised dashboards	`google_sheets_script`, 08, schema	Continuous from first response
4. Co-create	Discuss results in workshops, one on the production floor and one at a neutral venue, and agree transparency principles	05, 01	3 months
5. Publish	Publish the synthesis, communicate the decision and explain how input was used	01, 06, 07, 08	2 months

A smaller SME can compress the cycle to about three months by running one questionnaire wave and one workshop.

Minimum resources

- One coordinator with authority to share company information and report back to staff
- One facilitator not in the participants' line management, for example from a university, training centre or worker association
- Access to a spreadsheet and a free dashboard tool, or paper forms and a simple tally sheet
- Two to four hours of paid working time per participant for survey, interview and workshop

Recommended order of preparation

1. Brief supervisors with 07_supervisor_briefing_pack.md before any announcement to staff.
2. Announce the consultation with the first template in 06_communication_guidelines.md.
3. Recruit and collect consent with files 02 and 03.
4. Run the surveys and interviews, then the workshops.
5. Publish results and report back to participants within one month of the last workshop.

Licence and attribution

Apache 2.0. Reuse, adaptation and translation are allowed, including commercial use, provided the licence and the NOTICE are kept. Adapted questionnaires and translations can be contributed back through a pull request, so results become comparable across sectors and regions.

2. Synthesis report

Stakeholder perceptions of collaborative robotics in small manufacturing SMEs

Parity Platform P.C. and University of Patras, 2026. Licence: Apache 2.0.

1. Purpose and scope

The report summarises how manual workers, operators, supervisors, SME clients and members of the public perceive Human-Robot Interaction (HRI) in small manufacturing environments. It documents perceived benefits, risks and ethical considerations, and the transparency and engagement principles co-created by participants. It does not recommend for or against adoption.

2. Method

Element	Implementation
Case study sites	5 manufacturing SMEs in Greece, including PHEE and Meazon in Patras
Participant register	80+ contacts, balanced by gender, age and professional role
Interviews	30 semi-structured interviews (guide in 04_interview_guide.md)
Surveys	50+ validated responses across four role-based questionnaires: Manual Worker, Operator, Supervisor, Future Impact
Workshops	3 participatory workshops: 1 on-site at a Patras SME, 2 at the University of Patras; 45+ participants in total
Period	Data collection November 2025 to February 2026; workshops February to April 2026; synthesis May to June 2026
Ethics and data	Informed consent, anonymisation before analysis, GDPR-compliant processing (08_data_and_anonymisation.md)

Survey data were analysed descriptively by stakeholder category, role and prior exposure to robots. Interview and workshop transcripts were coded thematically by two researchers, one from each partner, and discrepancies were resolved by discussion. Workshop participants reviewed the draft findings and principles before publication.

3. Findings

3.1 Acceptance is conditional

Sentiment towards collaborative robots is cautiously positive. Workers and supervisors recognise gains in productivity, physical strain and safety. Support depends on three conditions stated across all groups: transparent communication about the purpose of the robot, hands-on training before deployment, and a real voice in the decision.

3.2 Training is the most consistent request

Training was the single most frequent request across all audiences. Manual workers and operators reported that the main barrier is not the robot itself, but the lack of practical training and of clear procedures when something goes wrong on the line. Short theoretical briefings were considered insufficient.

3.3 Trust is built or lost at supervisor level

Workers tend to mirror the stance of their supervisor. Where supervisors were prepared and communicated openly, worker concerns were lower. Where supervisors were uncertain or uninformed, rumours filled the gap. This finding led to the supervisor briefing pack.

3.4 Job displacement fear is task-specific

Fear of job loss was present but narrower than expected. Participants worried about specific tasks being removed rather than about losing their job entirely. The concern dropped markedly when concrete retraining options were presented together with the technology, and rose when automation was discussed without any plan for the people affected.

3.5 Perceived benefits and risks

Perceived benefits	Perceived risks
Reduced physical strain on repetitive or heavy tasks	Stress caused by unexpected robot actions
Consistent product quality	Mental load of monitoring a robot during shared tasks
Fewer injuries from manual handling	Unclear responsibility when the system makes an error
Opportunity to learn new technical skills	Loss of tasks and future reduction of staff
Relief from labour shortages	Robot output not justifying the investment

3.6 Ethical considerations raised

- **Responsibility for errors.** Operators reported feeling held responsible for mistakes made by the system. Participants asked for written rules on accountability.
- **Control and autonomy.** Workers want to remain in control of the workflow rather than paced by the robot.
- **Use of performance data.** Participants asked that data generated by robots are not used to monitor individual workers without consent.
- **Fair access to new roles.** Older workers and workers with lower formal qualifications asked for equal access to retraining.
- **Honest framing.** Participants objected to automation being presented only as "modernisation" when cost reduction is a driver.

3.7 Differences between groups

- Operators who interact with robots daily reported higher confidence and lower perceived risk than workers with little or no exposure.
- Prior exposure to robots was associated with lower perceived risk across all groups.
- Supervisors placed the main readiness gaps in communication, training and cross-department coordination rather than in the technology itself.
- Breakdowns by gender, age and role are available in the dashboards. With 50+ survey responses these comparisons are descriptive and are used to guide inclusive engagement, not to draw statistical conclusions.

4. Co-created transparency and engagement principles

The three workshops produced ten principles. They are the core of the HRIT Toolkit and apply to any automation decision that affects people on the production floor.

1. **Consult before you choose.** Engage affected staff before a technology or supplier is selected, while their input can still change the decision.
2. **State the real purpose.** Explain why automation is considered (cost, quality, safety, labour shortage) and which drivers matter most.
3. **Talk about tasks, not only jobs.** Describe which tasks change, which stay and which are new.
4. **Pair technology with training.** Announce the training and retraining plan in the same message as the deployment plan.
5. **Brief supervisors first.** Prepare supervisors before workers, so that they can answer questions consistently.
6. **Define escalation.** Before go-live, publish who to call, how to stop the robot and what happens after an incident.
7. **Clarify accountability.** State in writing who is responsible when a robot or its software makes an error.
8. **Protect worker data.** Do not use robot data to assess individual performance without explicit agreement.
9. **Include every voice.** Balance participation by gender, age, role, seniority and language; track and publish representation.
10. **Close the loop.** Publish the anonymised findings and explain how participant input changed, or did not change, the decision.

5. Implications

Audience	Implication
SMEs	Budget for training and supervisor preparation as part of the automation investment, not as an afterthought
Worker representatives	Use the questionnaires and principles as a structured basis for consultation
Vocational training centres	Develop short, hands-on modules for collaborative robot operation, troubleshooting and safe recovery
Policymakers	Link public support for automation in SMEs to evidence of prior staff consultation and a retraining plan
Researchers	Reuse the open schema to compare HRI perceptions across sectors and regions

6. Scope of validity

The evidence comes from five manufacturing SMEs in Western Greece and the participants who volunteered. Findings describe perceptions in that context and are presented as transferable practice, supported by the open instruments and schema that allow other organisations to test them in their own setting.

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3. Stakeholder map and recruitment plan

Template. Replace text in square brackets with local details.

1. Stakeholder map

Group	Who	Why they matter	Channel to reach them	Target share of participants
Manual workers	Production line, logistics and quality staff, including temporary and agency staff	Share the floor with the robot; most exposed to task change	Shift briefings, notice boards, worker representative	35 to 40%
Operators and technicians	Staff who programme, monitor or maintain the robot	Daily interaction; know failure and recovery in practice	Team leader, maintenance meeting	15 to 20%
Supervisors and managers	Line supervisors, team leaders, production and HR managers	Shape worker trust; manage the transition	Management meeting	15 to 20%
SME clients	Purchasers and quality contacts of the SME's customers	Expectations on quality, delivery and responsible production	Account manager	10%
Local community	Residents, vocational students, local associations, training centres	Future workforce; local labour market effects	Training centre, municipality, social media	10 to 15%

Representation targets for the whole sample:

- Gender: at least 40% of each gender among participants, or the share in the workforce if lower, stated explicitly
- Age: at least 20% of participants under 30 and at least 20% over 50
- Language: materials available in every language spoken by at least 10% of the workforce
- Seniority: at least one participant per shift and per department affected

2. Recruitment plan

Week	Action	Owner
1	Brief supervisors with the supervisor briefing pack	Coordinator
1	Announce the consultation to all staff (template in 06_communication_guidelines.md)	Management with worker representative
2	Distribute invitation and information sheet; open sign-up	Coordinator
2 to 3	Fill the participant register; check representation targets weekly	Coordinator
3	Targeted invitations to under-represented groups	Facilitator
4	Confirm interview and workshop slots within paid working time	Coordinator

Rules:

- Participation is voluntary and takes place during paid working time.
- Supervisors do not select participants and do not see who took part.
- No participant is contacted more than twice if they do not reply.

3. Invitation text (email or printed notice)

> **Subject: Your view on robots in our production: invitation to a short consultation**
>
> [Company name] is considering the use of collaborative robots in [area / process]. No decision has been taken yet. Before any decision, [Company name] and [facilitating organisation] want to hear from the people who would work with this technology or be affected by it.
>
> You can take part in one or more of the following: - a 10 minute online or paper questionnaire - a 30 to 45 minute confidential interview - a 2 to 3 hour workshop with colleagues
>
> Participation is voluntary, takes place during paid working time and is confidential. Your manager will not know what you said. Results will be published in anonymous form and shared with all staff by [date].
>
> To take part, contact [name, phone, email] or use the sign-up sheet at [location] by [date].

4. Short notice for SME clients and community participants

> [Company name] and [facilitating organisation] are running an open consultation on the possible use of collaborative robots in small manufacturing. Clients, residents, students and local organisations are invited to share their views through a short questionnaire or a public workshop on [date] at [venue]. Results will be published openly at [link].

4. Participant information sheet and consent form

Template aligned with the EU General Data Protection Regulation (Regulation (EU) 2016/679). Replace text in square brackets. Have the final version reviewed by the data protection officer of the controller.

Part A: Information sheet

Title of the study: [Study title, for example "Views on collaborative robots at Company name"]

Organisations responsible: [Controller: legal name, address]; [Facilitating organisation]

Contact: [Name, role, email, phone]. Data protection officer: [email]

Why this study takes place

[Company name] is considering the use of collaborative robots in [area]. Before deciding, the company wants to understand how the people affected see the possible benefits, risks and conditions. The study does not promote or reject robots.

What taking part involves

Depending on your choice: a questionnaire of about 10 minutes, an interview of 30 to 45 minutes, and/or a workshop of 2 to 3 hours. Interviews and workshops are audio recorded only if you agree.

Voluntary participation

Taking part is voluntary. You can stop at any time and withdraw your data until [date of anonymisation], without giving a reason and without any consequence for your employment.

What happens to your information

- Your answers are stored on [system] with access limited to [named roles].
- Names, contact details and any detail that could identify you are removed before analysis.
- Recordings are deleted after transcription and anonymisation, at the latest by [date].
- Your manager and colleagues will not see your individual answers.
- Anonymous results will be published openly, for example in dashboards and a report under an open licence, so that other organisations can learn from them. Groups smaller than five people are never reported separately.

Legal basis and your rights

The legal basis is your consent (Article 6(1)(a) GDPR). You have the right to access, correct, erase and restrict the processing of your personal data, and to lodge a complaint with the national data protection authority [name and website].

How results are used

Results will be shared with all participants and staff by [date]. The company will explain how the input was used in its decision.

Part B: Consent form

Tick each box that applies.

	Statement
☐	I have read the information sheet and had the opportunity to ask questions.
☐	I understand that participation is voluntary and that I can withdraw until [date] without consequences.
☐	I agree to take part in the questionnaire.
☐	I agree to take part in an interview.
☐	I agree that the interview is audio recorded for transcription.
☐	I agree to take part in a workshop.
☐	I agree that anonymous quotes from my answers may be used in published results.
☐	I agree that anonymised data may be published in an open repository for reuse by other researchers and organisations.

Name: _____ Signature: _____ Date: _____

Researcher: _____ Signature: _____ Date: _____

Keep one copy for the participant and one for the study file. Store signed forms separately from the response data.

5. Semi-structured interview guide

Duration: 30 to 45 minutes. One interviewer, optionally one note taker. Use a quiet room away from the line manager's office, or a phone call.

Before the interview

- Confirm signed consent, including whether audio recording is allowed.
- Record only the participant code, stakeholder group, department and prior exposure to robots (daily, weekly, rarely, never). No names in notes.
- Explain: no right or wrong answers; the interviewer has no role in performance reviews; the participant can skip any question.

Core questions (all groups)

1. Describe a normal working day. Which tasks take most of your time and effort?
2. What do you know about collaborative robots? Where did that information come from?
3. If a robot worked next to you or your team, what could improve? What could get worse?
4. What would make you feel safe working near a robot? What would make you feel unsafe?
5. Who should decide whether and how robots are introduced? What role should you have?
6. What information would you need, and from whom, before such a change?
7. What training would you need? In what format: classroom, on the line, with a colleague?
8. If something went wrong with the robot, what should happen? Who should you call?
9. Who should be responsible when a robot or its software makes a mistake?
10. Is there anything else the company should know before deciding?

Additional questions by group

Manual workers

- Which of your tasks would you be glad to hand over to a robot? Which would you want to keep?
- How would you like to hear about changes to your tasks: from your supervisor, in a staff meeting, in writing?
- What would a fair retraining offer look like for you?

Operators and technicians

- How easy is it to understand what the robot will do next? What helps?
- How do you recover from a failure today? What tools or access are missing?
- Does operating the robot make your job more skilled, or more repetitive?

Supervisors and managers

- What are the main reasons the company is considering automation?
- How prepared is your team in terms of communication, training and coordination?
- What questions do you expect from your team, and which are hardest to answer?
- What support would you need to manage a mixed human and robot team?

SME clients

- Does the use of robots by a supplier change how you view its quality, reliability or responsibility?
- Would you value evidence that staff were consulted before automation?

Community participants

- How do you see the effect of automation on local jobs and skills?
- What should local training centres offer?

Closing

- Summarise two or three key points back to the participant and ask if they are correct.
- Explain when and how results will be published.
- Thank the participant.

After the interview

- Within 48 hours: transcribe or write up notes; remove names, places and details that could identify the participant.
- Delete the audio file once the transcript is checked.
- Code the transcript against the themes in the synthesis report: benefits, risks, training, trust, job security, responsibility, communication, participation.

6. Participatory workshop facilitation guide

HRIT ran three workshops with 15 or more participants each: one on the production floor of a manufacturing SME and two at a neutral venue (the University of Patras). Each mixed workers, operators, supervisors, clients and community participants.

Roles

Role	Task
Facilitator	Neutral, not in the participants' line management; runs the agenda and protects equal participation
Co-facilitator	Tracks speaking time and representation; supports small groups
Note taker	Records discussion without names, only participant codes and groups
Company contact	Answers factual questions on plans; does not lead discussion

Materials

- Printed one-page summary of survey and interview results, with charts from the dashboards
- Sticky notes in two colours, markers, dot stickers
- Flip charts with the headings: Benefits, Risks, Conditions, Questions
- Speaking-time tally sheet (see below)
- Attendance sheet with participant code, group, gender and age band only

Agenda (3 hours)

Time	Block	Method
0:00	Welcome and ground rules	Purpose, confidentiality, no decision taken yet; agree rules: one voice at a time, criticise ideas not people, everyone speaks before anyone speaks twice
0:15	Results walk	Facilitator presents the one-page summary; participants add notes to the four flip charts
0:45	Misconceptions check	Short demonstration or video of the robot type considered; open questions on what it can and cannot do
1:15	Break	
1:30	Small-group discussion	Groups of 4 to 6, mixed by role; each group answers: "Under what conditions would this change be acceptable?"
2:15	Principles drafting	Groups report back; facilitator clusters conditions into draft principles
2:40	Prioritisation	Each participant places three dots on the principles that matter most
2:50	Next steps	Explain how results will be published and when participants will hear back

Inclusive facilitation methods

- **Silent writing first.** Participants write their views on notes before any open discussion, so that seniority does not set the tone.
- **Round robin.** Each person speaks in turn on key questions; passing is allowed.

- **Mixed small groups.** Supervisors and their own team members are placed in different groups.
- **Language support.** Provide materials and, where needed, an interpreter for every language spoken by at least 10% of participants.
- **Accessible timing.** Schedule within paid working time and across shifts; provide a second session for night shift staff if needed.

Speaking-time tracking

The co-facilitator records, per block, the approximate speaking minutes by group. Publish the totals with the workshop report.

Block	Workers	Operators	Supervisors / managers	Clients	Community	Women	Men
Results walk							
Small groups (report back)							
Principles drafting							

If one group exceeds 40% of speaking time in a block, the facilitator invites the other groups first in the next block.

Workshop report structure

1. Date, venue, number of participants by group, gender and age band
2. Main points per flip chart heading
3. Draft principles and dot-vote ranking
4. Open questions addressed to the company
5. Speaking-time totals

Circulate the report to participants for comment within two weeks, then merge it into the synthesis report.

7. Communication guidelines

These guidelines translate the HRIT findings into practical communication rules for SMEs considering collaborative robots. They apply from the first idea of automation to the months after deployment.

1. Rules

1. **Communicate early.** Announce the consultation before choosing a technology or supplier.
2. **Same message, same day.** Supervisors and staff receive consistent information; supervisors are briefed first, but the gap is no longer than a few days.
3. **Purpose first.** State why automation is considered and which drivers matter most, including cost if it is a driver.
4. **Task level detail.** Name the tasks that change, stay or are created. Avoid general statements such as "nothing will change".
5. **Training in the same message.** Every announcement about deployment includes the training and retraining plan.
6. **Say what is not known.** If a decision or detail is open, say so and give the date when it will be known.
7. **Two-way channels.** Offer at least one anonymous way to ask questions, for example a box or online form.
8. **Report back.** After the consultation, publish the results and explain how input was used.

2. Communication timeline

Stage	Message	Channel	Sender
Idea	Automation is being considered; consultation invited	Staff meeting plus written notice	Management with worker representative
Consultation	Invitation, information sheet, progress updates	Notice board, email, shift briefings	Coordinator
Results	Anonymous findings and principles	Staff meeting plus published report and dashboard	Management and facilitator
Decision	What was decided, why, and how input was used	Staff meeting plus written summary	Management
Preparation	Task changes, training plan, escalation procedure	Team meetings	Supervisors
Go-live	Contact points, how to report problems	On the line, printed escalation card	Supervisors
After 3 months	Review of experience, adjustments	Short survey and team meeting	Coordinator

3. Message templates

3.1 Announcing the consultation

> [Company name] is exploring whether collaborative robots could support work in [area]. No decision has been made. The people who would work with this technology know the work best, so [Company name] is asking for your views first, through a short questionnaire, interviews and a workshop run by [facilitating

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> organisation]. Results will be shared with everyone by [date], and the company will explain how your input was used.

3.2 Responding to concern about job loss

> The concern is understood and it was raised by many participants. Here is what is known today: the robot would take over [tasks]. These tasks currently occupy about [share] of the work in [area]. [Company name] commits to [no redundancies linked to this project / redeployment to roles X and Y / a retraining offer]. Training for [new tasks] will be offered to [who] starting [date], during paid time. Questions can be raised with [contact] or anonymously at [channel].

Use only commitments that management has approved in writing. If no commitment exists yet, say when the decision will be taken.

3.3 Retraining offer

> Staff in [area] are offered training in [robot operation / quality monitoring / maintenance]. The programme takes [hours] over [weeks], is delivered by [provider] on the line and in a training room, and is paid working time. Places are allocated first to staff whose current tasks change most. Sign-up: [contact] by [date].

3.4 Reporting back after the consultation

> Thank you to the [number] colleagues who took part. The main points were: [three points]. Based on this input, [Company name] has decided to [decision], and will [changes made because of the input]. Points that were raised but not adopted, and the reasons, are listed in the attached report. The full anonymous results are available at [link].

3.5 Escalation card (print and place at the workstation)

> **If the robot behaves unexpectedly:** 1. Press the emergency stop at [location]. 2. Move to a safe distance. 3. Call [name / role] at [extension]. 4. Report the event in [log / form]; reports are used to improve the system, not to blame staff.

4. Language to avoid and alternatives

Avoid	Use instead
"Nothing will change for you."	"These tasks will change; these stay the same."
"The robot will replace manual work."	"The robot will take over [task]; staff will move to [task]."
"This is about modernisation."	"The reasons are [cost, quality, safety, labour shortage]."
"You will be trained when needed."	"Training starts on [date] and covers [content]."
"If there is a problem, call maintenance."	"Stop, step back, call [name] at [extension]."

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8. Supervisor briefing pack

HRIT found that workers mirror their supervisor's stance on robotics. Where supervisors were prepared and communicated openly, worker concerns were lower. This pack prepares supervisors before staff are engaged. Use it in a 60 to 90 minute session with all supervisors of the affected areas.

1. What supervisors need to know before staff do

Topic	Questions to settle with management
Purpose	Why is automation considered? Which drivers matter most?
Scope	Which areas, lines and tasks are in scope? What is out of scope?
Status	What is decided and what is still open? When will open points be decided?
People	What commitments exist on jobs, redeployment and retraining?
Training	Who will be trained, when, by whom, during paid time?
Safety	What is the escalation procedure? Who is accountable for errors?
Data	Will robot data be used to assess individuals? (Recommended answer: no, without explicit agreement)
Consultation	How will staff be consulted, and how will results be used?

Supervisors should not be asked to announce a change they cannot explain. If an answer is not available, agree what supervisors say instead (see section 3).

2. The supervisor's role in the consultation

- Encourage participation; do not select participants or ask who took part.
- Allow time within the shift for questionnaires, interviews and workshops.
- Pass questions you cannot answer to the coordinator and report back to the team within one week.
- Take part in the supervisor questionnaires and a workshop as a participant, not as a moderator.

3. Common questions and suggested answers

Question from staff	Suggested answer
"Will I lose my job?"	"No decision has been taken. The company has committed to [commitment]. If you are worried, say so in the questionnaire or interview: this concern is exactly what the consultation is for."
"Why are we doing this?"	"The reasons given by management are [reasons]. If you see other reasons or risks, the consultation is the place to raise them."
"Is it safe?"	"Collaborative robots are designed to work near people with speed and force limits. Before any use, there will be training and a clear stop and escalation procedure. Tell us what would make you feel safe."
"Will the robot be used to watch us?"	"The company's position is [position]. Ask the coordinator if this is not clear."

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Question from staff	Suggested answer
"Who is to blame if the robot makes a mistake?"	"This will be set out in writing before any deployment. Your input on it is welcome."
"I do not have time for this."	"Participation is in paid time. I will organise cover for [slot]."
"Nobody will listen anyway."	"Results will be published to everyone by [date], and management will explain how the input was used."

4. Checklist

Before announcement

- ☐ Briefing session attended
- ☐ Answers to section 1 received from management
- ☐ Agreed wording for open points
- ☐ Time slots for team participation planned

During consultation

- ☐ Team informed in a briefing, not only by notice
- ☐ Questions logged and forwarded weekly
- ☐ No pressure on individuals to take part or not

Before go-live

- ☐ Task changes explained to each affected person
- ☐ Training completed before first shared shift
- ☐ Escalation card posted at every robot cell
- ☐ Contact for problems known to every shift

Three months after go-live

- ☐ Team meeting on experience so far
- ☐ Follow-up survey run (Manual Worker and Operator questionnaires)
- ☐ Adjustments agreed and communicated

5. One-page summary for supervisors

1. Your team will follow your lead. Be open, factual and consistent.
2. Do not promise what management has not committed to in writing.
3. Say what is known, what is not known, and when it will be known.
4. Speak about tasks, training and safety, not only about the technology.
5. Make time for your team to take part, and do not monitor who does.
6. Bring questions back within a week, even if the answer is "not decided yet".

9. Data, anonymisation and publication

This document describes the HRIT data model, the anonymisation protocol applied before analysis and publication, and the rules for reuse.

1. Data sources

Source	Format	Storage during the study	Published form
Four web questionnaires	JSON submitted to Google Apps Script, one row per response in Google Sheets	Access-restricted spreadsheets, one per questionnaire	Aggregated Looker Studio dashboards; anonymised exports
Interviews	Audio (with consent) and transcripts	Encrypted storage at the coordinator; audio deleted after transcription	Anonymised quotes and themes in the synthesis report
Workshops	Notes, flip charts, dot votes, attendance and speaking-time sheets	Coordinator	Workshop reports merged into the synthesis report

2. Data model

The complete field list is in hrit_data_schema.json. It covers 79 fields across the four questionnaires and records for each field: key, question text, type, answer options or Likert labels, whether it is required, display conditions and whether it is published.

Questionnaire	`app_source`	Sections
Manual Worker	`hri_manual_worker_survey`	General information; Safety and perceptions; Workload and stress; Training and confidence
Operator	`hri_operator_survey`	General information; Usability and interface; Cognitive load; Failures and recovery; Psychological impact and trust
Supervisor	`hri_manager_survey`	General information; Reasons for adoption; Impact after integration; Final evaluation
Future Impact	`hri_future_impact_survey`	General information; Drivers for automation; Readiness and concerns

Likert items are stored as integers 1 to 5, where 1 is the first label listed in the schema. Multi-select answers are stored as comma separated text.

3. Anonymisation protocol

Applied before any analysis export or publication:

1. **Remove direct identifiers.** Delete the optional `email` field and any names, phone numbers or company names entered in free text.
2. **Coarsen time.** Replace `timestamp` with year and month.
3. **Screen free text.** Read every free-text answer; remove references to named individuals, specific machines or events that could identify a person.
4. **Protect small groups.** Do not report any combination of department, country, experience band or size of operation with fewer than five responses; merge categories or suppress the cell.

5. **Separate consent records.** Keep signed consent forms and participant registers apart from response data, with access limited to the coordinator.
6. **Document.** Record each anonymisation step and the date in a processing log.

4. Publication

- Aggregated results are published in public dashboards that require no login.
- Anonymised response tables can be exported from the spreadsheets as CSV, with the published fields only, and added to this repository or an open repository with a persistent identifier.
- Interview and workshop material is published only as anonymised themes and quotes, with participant consent.

5. Reuse

- The schema, questionnaires and scripts are reusable under Apache 2.0.
- Organisations that reuse the questionnaires are encouraged to keep field keys unchanged, so that results can be compared and merged across sites, sectors and countries.
- New fields should be added with new keys rather than by changing the meaning of existing ones.

6. Retention

Data	Retention
Audio recordings	Deleted after transcription check
Raw survey responses with email	Deleted at project end; anonymised copy kept
Consent forms	Kept for the period required by the funding agreement, then deleted
Anonymised data and reports	Kept and published without time limit

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Annex A. Questionnaire field reference

Field list of the four questionnaires as published in the open repository (`toolkit/hrit_data_schema.json`). Likert items are stored as integers 1 to 5. Fields marked "not published" are removed or coarsened before publication.

HRI Manual Worker Interaction Survey (hri_manual_worker_survey)

Production line workers who work, or may soon work, alongside collaborative robots. Source folder: `Manual Worker HRI Survey/`

Key	Question	Answer type
1. General Information		
`department`	Department:	Choice: Production / Assembly; Logistics / Warehousing; Quality Control; Maintenance / Engineering; Management / Administration; Other
`email`	Email Address (Optional) (optional, not published)	Email (optional)
`country`	Country:	Choice: ISO country list plus Other
`years_experience`	Years of work experience	Choice: 0-5 years; 6-10 years; 11-15 years; 15+ years
`interaction_frequency`	How often do you interact with robots in your work environment?	Choice: Daily; Weekly; Rarely; Never
2. Safety & Perceptions		
`risk_felt`	Have you ever felt at risk due to robotic behaviour?	Choice: Yes; No
`risk_severity`	Please rate the severity of the perceived risk: (shown if risk_felt = 'Yes')	Scale 1 to 5: Very Low … Very High
`perception_safety`	I feel safe when working in close proximity to a robot.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`perception_predictability`	I understand how the robot behaves and can predict what it will do next.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`perception_trust`	I trust the robot to perform its task reliably without making mistakes.	Scale 1 to 5: Strongly Disagree … Strongly Agree
3. Workload & Stress		
`productivity_impact`	Working with robots has increased my overall productivity.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`stress_unexpected`	I feel stressed or anxious when the robot performs unexpected actions.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`mental_load`	I find it mentally challenging to cooperate and coordinate with the robot.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`physical_strain`	The interaction with the robot increases my physical strain or fatigue.	Scale 1 to 5: Strongly Disagree … Strongly Agree
4. Training & Confidence		

Key	Question	Answer type
`training_received`	I have received training before using the robot.	Choice: Yes; No
`training_quality`	Rate your training quality overall: (shown if training_received = 'Yes')	Scale 1 to 5: Poor … Excellent
`training_relevance`	The training I received prepared me well for real-world tasks involving the robot. (shown if training_received = 'Yes')	Scale 1 to 5: Strongly Disagree … Strongly Agree
`confidence_level`	I feel confident operating or interacting with the robot.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`confidence_autonomy`	I feel confident enough to operate the robot without needing constant supervision or assistance.	Scale 1 to 5: Strongly Disagree … Strongly Agree

HRI Operator/Engineer Interaction Survey (hri_operator_survey)

Technical operators and engineers who interact directly with the robot. Source folder: `Operator HRI Interaction Survey/`

Key	Question	Answer type
1. General Information		
`department`	Department:	Choice: Production / Assembly; Logistics / Warehousing; Quality Control; Maintenance / Engineering; Management / Administration; Other
`email`	Email Address (Optional) (optional, not published)	Email (optional)
`country`	Country:	Choice: ISO country list plus Other
`years_experience`	Years of work experience	Choice: 0 - 5 years; 6-10 years; 11-15 years; 15+ years; More
2. Usability & Interface		
`training_received`	I have received training before using the robot's operating tool.	Choice: Yes; No
`training_quality`	If Yes, rate your training quality overall: (shown if training_received = 'Yes')	Scale 1 to 5: Poor … Excellent
`interface_intuitive`	The robot's interface (e.g., GUI, controller hardware) is intuitive and easy to use for all required operational tasks.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`interface_safety_confidence`	In any given time, how confident are you about the robot's interface ability to ensure safety if needed?	Scale 1 to 5: Not at all Confident … Very Confident
3. Cognitive Load & Complexity		
`robot_complexity`	How complex is it to operate the robot?	Scale 1 to 5: Very Complex … Very Easy
`assistance_frequency`	How often do you need documentation or assistance?	Scale 1 to 5: Rarely … Very Often
`mental_effort_monitoring`	How much mental effort is required to monitor the robot during shared tasks?	Scale 1 to 5: Very Low Effort … Very High Effort
`information_overload`	How often does the system used to operate the robot overload you with information?	Scale 1 to 5: Rarely … Very Often

Key	Question	Answer type
4. Failures & Recovery		
`robot_failure_frequency`	How often do robots fail or require human intervention?	Scale 1 to 5: Rarely … Very Often
`troubleshooting_ease`	How easy is it to troubleshoot potential failures of the robot or the robot's interface?	Scale 1 to 5: Very Hard … Very Easy
`hmi_recovery_tools`	The Human-Machine-Interface (HMI) provides the necessary tools and access to safely and efficiently recover from a failure.	Scale 1 to 5: Strongly Disagree … Strongly Agree
5. Psychological Impact & Trust		
`sense_of_control`	I feel in control of the robot's actions, rather than the robot controlling my workflow.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`job_security_confidence`	I am confident that the introduction of more robots like this will not negatively impact my long-term job security.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`error_responsibility`	When the system makes a mistake, I feel like I am the one held responsible for the error.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`skill_enhancement`	I feel that operating this robot enhances my professional skills rather than making my job feel repetitive or 'robotic'.	Scale 1 to 5: Strongly Disagree … Strongly Agree

HRI Manager/Supervisor Survey (hri_manager_survey)

Line supervisors, team leaders and managers of teams working with robots. Source folder: `Supervisor HRI Interaction Survey/`

Key	Question	Answer type
1. General Information		
`department`	Department:	Choice: Production / Assembly; Logistics / Warehousing; Quality Control; Maintenance / Engineering; Management / Administration; Other
`email`	Email Address (Optional): (optional, not published)	Email (optional)
`country`	Country:	Choice: ISO country list plus Other
`operation_size`	Size of operation:	Choice: 1-50 employees; 51-200 employees; 201-500 employees; 500+ employees
`employees_interacting`	Number of employees interacting with robots:	Choice: 1-30; 31-60; 61-100; More
2. Reasons for Robot Adoption		
`adoption_reasons`	What are the main reasons for adopting robots in the workforce?	Choice: Reduce physical strain; Reduce labour costs; Increase quality; Improve safety; Speed up production; Other
3. Evaluation of impact after robot integration		

Key	Question	Answer type
`impact_productivity`	Productivity:	Scale 1 to 5: Very Poor … Very strong
`impact_safety`	Worker Safety:	Scale 1 to 5: Very Poor … Very strong
`impact_quality`	Product Quality:	Scale 1 to 5: Very Poor … Very strong
`impact_satisfaction`	Worker Satisfaction:	Scale 1 to 5: Very Poor … Very strong
`impact_cost`	Cost Reduction:	Scale 1 to 5: Very Poor … Very strong
4. Final Evaluation		
`team_adaptation_rating`	How would you rate your team's overall adaptation to working alongside robots?	Scale 1 to 5: Very Poor … Excellent
`supervisor_responsibility_changes`	How has robot integration changed your responsibilities as a supervisor? (optional)	Multiple choice: More time spent on coordinating workflows; Increased need for technical oversight; Reduced involvement in repetitive tasks; More time spent on employee support and training; No significant change
`critical_support_needed`	What type of support would be most critical for ensuring a smooth and successful further integration of robots in your department? (optional)	Multiple choice: Additional staff training; Technical support from robot suppliers; More detailed performance data and analytics; Financial resources for upgrades and maintenance; Clearer cross-department coordination; Other
`integration_improvements`	What aspect of the integration process would you improve if the transition were repeated? (optional)	Multiple choice: Improve training and upskilling of employees; Increase the testing and calibration period before full deployment; Ensure faster or more reliable technical support during early stages; Better planning of workflow redesign around robots; No major improvements needed, the transition was smooth; Other

Future impact of HRI integration (hri_future_impact_survey)

Supervisors and managers assessing medium and long term effects of HRI. Source folder: `Future Impact HRI Supervisor/`

Key	Question	Answer type
1. General Information		

Key	Question	Answer type
`department`	Department:	Choice: Production / Assembly; Logistics / Warehousing; Quality Control; Maintenance / Engineering; Management / Administration; Other
`email`	Email Address (Optional): (optional, not published)	Email (optional)
`country`	Country:	Choice: ISO country list plus Other
`years_experience`	Years of work experience:	Choice: 0-5; 6-10; 11-15; 16-20; More
`size_of_operation`	Size of operation:	Choice: 1-50 employees; 51-200 employees; 201-500 employees; 500+ employees
2. Drivers for Automation		
`driver_productivity`	Improving productivity	Scale 1 to 5: Not a factor ... Primary Driver
`driver_costs`	Reducing long-term costs	Scale 1 to 5: Not a factor ... Primary Driver
`driver_dependency`	Reducing dependency on manual labor	Scale 1 to 5: Not a factor ... Primary Driver
`driver_safety`	Enhancing worker safety	Scale 1 to 5: Not a factor ... Primary Driver
`driver_labor_shortage`	Mitigating labor shortages	Scale 1 to 5: Not a factor ... Primary Driver
`driver_innovation_pressure`	How much does the pressure to appear "modern" or "innovative" influence the decision to adopt robots?	Scale 1 to 5: Not at all ... Significantly
`goal_minimize_turnover`	How important is the goal of minimizing the impact of staff turnover and labour shortages?	Scale 1 to 5: Not a Priority ... Critical Priority
`responsibility_comfort`	How comfortable do you feel taking responsibility for decisions made by automated or semi-autonomous systems under your supervision?	Scale 1 to 5: Very uncomfortable ... Very Comfortable
3. Readiness & Concerns		
`preparedness_level`	How prepared do you feel your department is in terms of communication, training, and coordination required for a smooth transition to automation?	Choice: Fully prepared; Mostly prepared; Partially prepared; Minimally prepared; Not prepared at all
`biggest_concern`	As a supervisor, what is your biggest concern regarding this transition?	Choice: Morale Drop; Competence gap; Performance Skepticism; Resistance in the technology
`team_trust_robot_ability`	I believe my team will trust the robot's ability to perform tasks better than they can.	Scale 1 to 5: Strongly Disagree ... Strongly Agree

Key	Question	Answer type
`managing_mental_demand`	I believe that managing a robotic workforce will be less mentally demanding than managing a purely manual workforce.	Scale 1 to 5: Strongly Disagree … Strongly Agree
`importance_understanding_limitations`	Before approving robot integration, how important is it for you to clearly understand the robot's limitations, failure modes, and edge cases?	Scale 1 to 5: Not Important … Extremely Important

Licence, citation and funding

Licence

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Where to find the materials

Project page	parityplatform.com/projects/hrit
Repository (questionnaires, scripts, licence)	https://github.com/Parity-Platform/hri_survey
HRIT Toolkit folder	https://github.com/Parity-Platform/hri_survey/tree/main/toolkit
Live dashboard, Manual Worker survey	lookerstudio.google.com/reporting/f489fdd2-0b74-4a31-a414-2e7914e1dd18
Live dashboard, Supervisor survey	lookerstudio.google.com/reporting/e43095b6-9351-407a-8b6e-81f03903d8bf

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