

EON Field IQ Ultra

From Showing to Knowing

Show the move. Check the touch. Learn from every step.



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Summary in one page

Field IQ already does a lot. Point an iPhone at a machine. It names the parts, gives the steps for a job and draws a moving symbol at the right part. It checks your work from a photo and keeps a signed record.

Dan sees three gaps.

- **The SOPs are too short.** Dan often sees a job done in three or four steps.
- **The check is weak.** On a billboard of a machine, nothing ever changes, so a photo check can never pass.
- **The choices are hidden.** The phone shows one job. The others sit behind a small button.

Field IQ Ultra fixes these, then goes further.

- **Five jobs plus “My own job”**, in a tidy dropdown.
- **Quick or Detailed SOPs**, in the style of the 144 EON Situation Room SOPs.
- **An SOP library.** Every SOP is saved, with a picture. Nobody writes the same SOP twice. New SOPs can be made from sessions.
- **Showing:** a floating hand plays the exact movement at the part.
- **Knowing:** the phone sees your fingertip touch the right part, on the real machine or on a picture. A chime plays. The part turns green.
- **Learning:** every checked step becomes a record. Assess IQ scores it. Compound IQ gathers it. EON Delta, our own AI model, learns from it.
- **Robots:** Robot IQ Skill Packs load an industry’s know-how onto a robot you buy off the shelf.

The order: options, SOPs and library on the iPhone first. Then touch check and floating hands. Then motion, voice and scoring. Then the data and EON Delta. Then Robot IQ.

What we need most: customer contracts that let us learn from session data, and each worker’s consent.

1. The problem

SOPs that are too short

An SOP is a Standard Operating Procedure: the written steps for a job.

Today the AI writes the steps from one photo, with at most 10 steps. Dan often sees jobs done in three or four. Nobody measures how many really come back, so the first small task is to count.

Short is fine for a demo, not for real work. Take a pump skid: a pump, its motor and its valves on one steel frame. To isolate the pump (make it safe to work on), a real crew stops the pump, locks the switch, closes two valves, drains the casing and checks for pressure. Each is a step, with a part, a way to know it worked, and a reason.

Field IQ also writes the SOP again for each new capture, which takes 25 to 40 seconds. Only the same machine on the same phone gets its steps back. Two workers at the same machine can get two different SOPs.

Checks that a billboard cannot pass

Today you do the step and tap “Check if it’s done”. The phone takes a photo. The AI answers Done, Not yet or Can’t tell.

The AI never says Done without visible proof. That is right on a real machine. But at a trade show, the “machine” is often a billboard: a big printed picture. You “close the valve” on the picture. The picture does not change. So the answer is always Not yet or Can’t tell.

A photo also misses what your hand did. Today the phone only knows if a hand is in view, yes or no. It does not know where your finger is.

Only one option shows

After a capture, the AI suggests two to six jobs. The phone shows one big button: the likeliest job. The rest hide in a small “Other jobs” menu that appears only after you tap “Guide me”. The text is large, so in portrait only one job reads at a glance. There is no “My own job”.

2. What Field IQ Ultra does

The phone flow in five steps

- **Point.** Point the phone at the thing. Tap Capture.
- **Pick.** The first job shows. Open the dropdown for more, plus “My own job”. Then pick Quick or Detailed.
- **Do.** A floating hand shows each movement at the part.
- **Check.** You touch the part. The phone confirms it.
- **Learn.** The SOP goes into the library, with a picture. The session record goes to Assess IQ.

You can also start from the SOP library, or upload your own SOP or permit. Field IQ’s Train AI screen, where you add your own documents, already takes uploads.

Five options in a dropdown

Example: the air-conditioner remote. Point the phone at it. You see:

- **Cool the room to 24 degrees** (shown)
- Switch to fan only
- Set the sleep timer
- Clean the remote
- Change the batteries
- My own job...

On a pump skid, the list might start with “Start the pump”, then “Isolate the pump for maintenance”, “Check the seal for leaks”, and so on.

- The AI offers up to five jobs when it knows the object: five in most cases, never padded with weak ones. When fewer make sense, it says so.
- When it does not know the object, it says what the camera saw. It is never silent.
- The others open from the first. Smaller text lets all five fit in portrait.
- “My own job” opens a short text box. You can also say it.
- Or tap one part, such as the fan button, and pick what to do with it.

Quick or Detailed

Two lengths of the same SOP.

- **Quick:** a few short steps, one line each. Good for a demo.
- **Detailed:** every step the job really needs, in the style of the EON Situation Room SOP Book (144 SOPs for 12 oil and gas training machines). Each step has five parts. The book's steps have three (what to do, the part, how you know it worked). We add "why it matters" to every step, and a "watch out".

Part of the step	Example: pump skid, step 4 (HV-101A is the tag printed on the valve)
What to do	Turn the handwheel clockwise until it stops.
Which part	Suction valve HV-101A, left of the pump.
How you know it worked	The position indicator shows CLOSED.
Why it matters	An open valve lets liquid back into the pump while you work on it.
Watch out	Never put a bar on the handwheel.

The Quick version is one line: "Close the suction valve HV-101A."

A lesson from the Situation Room book: its SOPs have only 5 to 8 steps. They feel detailed because each step is rich. So Detailed means both: more steps where the job needs them, and richer steps.

Even in a demo, tap "More detail" on one step, or switch the whole SOP. You keep your place.

Proposal for Dan: Quick has up to 6 steps, never padded. Detailed drops today's cap of 10 and allows up to 40.

The SOP library

A new **SOPs** button opens the library: the SOPs for the objects you have worked on. Each entry shows:

- the object, with a picture saved from the session
- the steps, Quick and Detailed
- where it came from: "Made by the AI", "From the maker's manual, page 12", "Written by Dan" or "Made from a session"
- who approved it

The next time you point at the same machine, the saved SOP comes back at once. No AI wait, and the same steps every time. Share it, and your whole team gets it too.

SOPs made from sessions

Field IQ records what you did, step by step, for Assess IQ: each step, each part, each check. So a good session can become an SOP. We call these synthetic SOPs.

Example: an expert does "clean the suction strainer" while Field IQ watches. ("Rehearse this job", where an expert does the job once for Field IQ to record, already keeps a few seconds of video and a "what done looks like" photo per step.) Field IQ Ultra writes a draft SOP from that record. The expert fixes it and approves it. It goes into the library, marked "Made from a session".

Proposal: nobody else uses a synthetic SOP until a person approves it.

So the library grows by itself. Every job done well makes the next one easier.

3. Showing: floating hands and symbols

Today Field IQ shows each movement with a small animated symbol. There are 16, such as “turn left”, “press”, “open” and “remove”. Each sits on a dark disc beside the green ring at the part. Dan likes them. We keep them.

Field IQ Ultra adds the **floating hand**. A see-through “ghost” hand appears at the part and plays the exact movement: press the button, turn the handwheel until it stops, pull the lever down.

A new setting, **Guidance style**, offers Symbols, Hands or Both.

Dan asked how we would do it. Our proposal for the default is **Both, one thing at a time**:

- A step starts. The hand plays the movement once, at the part.
- The hand fades. The symbol stays at the part as the reminder.
- The hand plays again if you tap it, or if you hesitate (about 5 seconds with no touch).

Two moving things at one part is noise. One at a time is calmer.

Assess IQ then compares the three styles: which gives more steps done right, and faster. We pick the default on evidence, not taste.

Phone first, then Meta Quest. The Quest web page already lets you pinch parts with bare hands.

4. Knowing: the touch check

Showing is half the job. Knowing that the worker did it is the other half.

Version 1: the fingertip

Apple’s hand-pose tracking finds 21 points on each hand, including every fingertip. It runs on the phone itself.

Field IQ already knows where the part is on screen: it draws the green ring there. So the check is simple. Is the tip of your index finger on the right part? Then you touched it.

Real thing or picture

- **On a real machine, with a Pro iPhone.** Pro iPhones (every Pro model since the 12 Pro) have LiDAR, a small laser that measures distance up to about 5 metres. Field IQ already uses it to pin the green ring to the real part. Now we also measure the distance to your fingertip. Finger on the part, at the part’s distance: a real touch. This is the most impressive version.
- **On a picture.** On a billboard, your fingertip goes on the printed part. Same check, flat surface. Now the billboard works.
- **No LiDAR.** The phone still finds your fingertip in the picture. Hold it on the part for a moment: it counts as “pointed at”, not a real touch.
- **No real thing in front of you** (a photo from the library), or gloves: touch the part on the screen instead.

Honest limits, to test early on real phones:

- The depth map is small, 256 by 192 points. A fingertip covers only a few.

- Your finger hides the surface behind it, so we measure the surface before your hand arrives.
- Apple warns that gloves make hands harder to find. We must test with real work gloves.

Sound and colour

When the phone sees you did it:

- **A nice sound.** A short chime that means “I saw you touch it”. Like today’s sounds, it never plays over the voice.
- **The part changes colour.** The part itself turns green in AR, right on the machine. (AR, augmented reality, means the phone draws on top of the live camera picture.)

Today Field IQ colours parts on 3D models only. On a real machine it knows a box around the part, not its shape. Version 1 can fill the box. Tracing the true shape is new work for later.

Version 2: voice and motion

- **Voice.** You say what you are doing: “I’m turning it 45 degrees.” In hands-free mode the phone already understands commands such as “next” and “I did it”. Now it also matches your words to the step.
- **Motion.** The phone follows your hand path. Did your hand turn the handwheel clockwise until it stopped?

Voice is your word, not proof. Field IQ records it as “you confirmed”, never as “the AI saw”.

Quick and thorough

Level	What it checks	Works on
Quick	You touched the right part.	Real machine, picture or screen
Thorough	You made the right movement, and then the machine changed.	Real machine

On the pump skid, Quick says: “You touched HV-101A.” Thorough says: “You turned HV-101A clockwise, and the photo shows its indicator at CLOSED.”

A picture never changes, so on a billboard Thorough says so, in words. Quick is the right level there. And a check never presses Next for you.

5. Assess IQ, Compound IQ and EON Delta: the data flywheel

A flywheel is a heavy wheel. It is hard to start. Then each push makes it spin faster. Our data works the same way.

- **Assess IQ** assesses what you did, step by step.
- **Compound IQ** gathers the records from many sessions and links them.
- **The distillery** cleans the records and boils them down into lessons a model can learn from.
- **EON Delta**, our own AI model, learns from those lessons.
- A better EON Delta gives better guidance. Better guidance gives better records.

Dan’s picture: a fleet of cars where every mile driven by one car teaches all of them.

What one step record holds

In the record	Example: pump skid, step 4	Kept today?
The step and the part	Close suction valve HV-101A	Yes
The guidance shown	Hand, then symbol	New
The touch	Fingertip on HV-101A, 9 seconds in	New
The hand path and motion	Turned clockwise about 3 turns, until it stopped	New
What was said	"Closing it now, three turns"	New
The check photo and the verdict	Done, seen by the AI	Yes
Time on the step	27 seconds	Yes
An expert's correction	"Turn until it stops, then check the stem"	New

Today's record is already signed and chained, so any later change shows. It does not yet hold hands, touches, motion or speech.

Why many records make a better model

One record teaches very little. A thousand records of "close the suction valve" show:

- what right looks like, from many different hands
- the common mistakes, such as turning the wrong valve
- where people hesitate, so the SOP needs more detail there
- what experts correct, which is the most valuable part

The aim: with thousands of records, then millions, EON Delta beats any frontier AI model at these jobs, because it has seen real hands do real work.

Research supports this. Meta's Ego-Exo4D team tried to judge a person's skill level from video alone, choosing from four levels. The best single-video result in their paper was right 50.4% of the time (51.0% when several attempts by the same person were pooled). Always guessing the most common level scored 42.4%. In a 2025 challenge, the best team reached 53%. General video AI cannot yet judge skill well. Field IQ has what that video lacks: it knows the step, the part and the expected movement, and it gets expert corrections.

From frontier AI data to EON's own data

First, data from frontier AI models. Today a frontier AI model names the parts and writes the steps. Its answers, plus what workers did and what experts corrected, become our first records. Dan will use models whose terms allow this.

Later, EON's own data, from EON Live (the model library), EON Genesis (scored lessons), EON Tacit (expert know-how), EON Control Room, EON Situation Room (what happens if you get it wrong) and EON Mirror Direct (3D models of the machines).

EON Delta starts from an open-weights model: a model whose files we may download, run and teach ourselves. We pick one whose licence lets us own what we build.

6. Robots: Robot IQ and Skill Packs

The same records can teach robots. “This part, this movement, this check” is a lesson for a robot too.

Dan’s long-term picture: buy a robot off the shelf. Load an industry pack: oil and gas, aerospace, and more. The robot then does the task better than any frontier AI model, because it carries the industry’s know-how.

EON has a product called Robot IQ. Today it is fuzzy. Dan called the packs “robot cartridges”. Skill Packs is the working modern name. This makes it clear:

Robot IQ is the EON brain for a robot you buy. Skill Packs are what you load into it, one for each industry.

What a pack holds

Example: the oil and gas pack.

- **The SOPs**, starting with the 144 Situation Room SOPs.
- **The machines and parts**, with 3D models.
- **The movements**: hand paths from thousands of checked human steps.
- **The checks**: “how you know it worked”.
- **The safety rules**: hazards, stops, what never to do.
- **The trained skill**: the EON Delta lessons for that industry.
- **Practice scenes**: simulations to test a robot before it touches a real machine.

How robots learn from people: Meta Ego-Exo4D

Ego-Exo4D is a large video collection of people doing skilled tasks. Meta’s research team (FAIR), Meta’s Project Aria and 15 university partners built it over two years. It was announced on 30 November 2023.

- Each task is filmed two ways at once: “ego”, first person, through Project Aria glasses; and “exo”, from 4 to 5 cameras around the room.
- Version 2 has 1,286 hours of video from 740 people, across 43 activities such as cooking, bike repair and CPR.
- It marks the 3D position of the hands, and 52 coaches commented out loud on what was done well or badly.

Meta’s stated goals match ours: an AI coach on smart glasses, and robots that learn by watching people. But it has no plant work. Field IQ Ultra records industrial jobs, with the step already known.

A caution. The Ego-Exo4D licence lets companies train AI models on the data, for set purposes, and use those models in products. The data itself may not appear in any product. The published licence is marked as a draft. Each data owner has its own agreement, signed by an official signatory. Whether teaching a robot to move fits those purposes is a question for legal.

Five ways to teach a robot

Way	In plain words	Examples
A. Drive the robot (“teleoperation”)	A person steers the robot, often through a VR headset. The robot records it.	ALOHA: two arms on a \$20k budget; learned fine tasks from about 10 minutes of demos. Open-TeleVision: works with Meta Quest 3.

Way	In plain words	Examples
B. Watch people's hands	The robot learns from video of hands and maps the motion onto its own hand ("retargeting").	Ego-Exo4D. EgoMimic: "1 hour of additional hand data is significantly more valuable than 1 hour of additional robot data."
C. Practise in a simulator	Practise in a virtual factory. Turn a few real demos into thousands.	NVIDIA Isaac Lab Mimic turned about 10 human demos into 1,000. NVIDIA Cosmos makes realistic training video.
D. Start from a robot brain ("foundation model")	Take one big pretrained robot model. Give it a short lesson for your task.	NVIDIA Isaac GR00T N1.7: open, commercial use allowed. Hugging Face LeRobot: an open library. SmolVLA: small and open; can be trained on one gaming graphics card.
E. Plan from the SOP	A planner reads the SOP and turns it into a list of robot skills.	ProgPrompt: writes the plan as a short program. NVIDIA Cosmos-Reason2: suggests the next steps.

Where Field IQ Ultra fits

The five ways work together. Field IQ Ultra feeds four of them:

- our hand paths feed **B**
- our SOP library feeds **E**
- EON's 3D models feed **C**
- our records teach an open robot brain, **D**

Then a few drive-the-robot demos (**A**) finish the job, because human video alone is not yet enough. Our SOPs tell the person driving what to do.

The honest gap: a robot hand is not a human hand. So we start in a simulator and with a small lab arm, never on a live plant.

7. What we build first, and the order

Stage	What	Where
1	Five jobs in a dropdown, plus "My own job". Quick and Detailed SOPs. The SOP library, with pictures.	iPhone
2	Touch check, version 1: fingertip, depth on Pro iPhones, screen touch elsewhere, chime, part turns green. Floating hands and the Guidance style setting.	iPhone, then Meta Quest
3	Motion and voice checks (version 2). Quick and Thorough levels. An Assess IQ score for each step.	iPhone and Assess IQ
4	Step records kept and sent, with consent. Compound IQ and the distillery. A first EON Delta model.	EON servers

Stage	What	Where
5	Robot IQ Skill Packs. A first oil and gas pack, tested in a simulator, then on a small lab arm.	EON lab

Each stage ships with a new test on the Field IQ test card and a row in the feature list. Dan sets the dates. None are promised here.

8. What it means for customers

Faster training. The hand shows the move, right at the part. A new worker learns on the real machine, not from a binder. The SOP is ready in the library.

Safer work. The AI never says Done without visible proof. Every step records how it was checked: seen by the AI, touch measured by the phone, or the worker's own word. Field IQ Ultra adds proof that the right part was touched. A touch on the wrong valve is flagged the moment it happens, with a warning tone, a buzz and the right part's name.

Proof of skill. The Assess IQ Report already shows each step, its photo and who decided. Field IQ Ultra adds the right part, the right movement, and whether it was right first time. A supervisor sees who is ready. That is proof, not a signature on a form.

Demos that work. On a billboard at a trade show, the touch check works. The chime plays. The part turns green.

Later, robots. The same know-how that trains people can train the customer's robots.

9. What we need

- **Customer contracts that allow learning from session data.** Agreed in principle. Legal writes the clause. Without it, there is no EON Delta.
- **Team consent.** Each worker agrees in the app before hand paths and voice are kept. We say plainly what is kept. A worker can say no and still use Field IQ.
- **Apple's rules.** Users must agree before data goes to third-party AI. Apple also limits how depth-sensor data may be used. Legal must confirm that teaching EON Delta from hand paths is allowed.
- **Meta's rules.** Meta allows Quest hand data only for running hand tracking in the app. We ask Meta or legal before Quest hand paths go into training.
- **The Ego-Exo4D licence,** if we use the data. An official signatory signs. Legal confirms that robot training fits.
- **Storage.** The EON server does not yet keep capture records, and Assess IQ cannot yet collect the sessions our server already stores. Both must be built.
- **Pro iPhones** for the test team, for the real touch check.
- **For robots, later:** a strong AI computer (NVIDIA recommends a graphics chip with 40 GB of memory or more to teach GR00T) and a small open arm kit for the lab.
- **Decisions from Dan:** the names, the default Guidance style, the Quick and Detailed sizes, and the dates.

10. Glossary

Term	What it means
AR (augmented reality)	the phone draws on top of the live camera picture.
Assess IQ	assesses what a worker did, step by step.
Compound IQ	gathers records from many sessions and links them.
Distillery	the step that cleans records and turns them into lessons for EON Delta.
EON Delta	EON's own AI model, which learns from our records.
Ego-Exo4D	Meta's large video collection of people doing skilled tasks.
Frontier AI model	one of today's leading general AI models.
GPU	the graphics chip that AI training runs on.
Hand path	the line your fingertip draws as you do a step.
Isolate	make a machine safe to work on: stopped, locked off and with no pressure left.
LiDAR	a small laser in Pro iPhones that measures distance.
Open-weights model	a model whose files we may download, run and teach ourselves.
Part tag	the label printed on a part, such as HV-101A.
Pump skid	a pump, its motor and its valves on one steel frame.
Robot IQ	the EON brain for a robot you buy.
Skill Packs	an industry's know-how, packed for Robot IQ.
SOP (Standard Operating Procedure)	the written steps for a job.
Synthetic SOP	an SOP made from a recorded session, approved by a person.