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**EIC INNOVATION PROCUREMENT PROGRAMME**

# DeepEn One (NeuroDeploy) case study

DeepEn

with the support of

LIN LEIBNIZ INSTITUTE FOR NEUROBIOLOGY MAGDEBURG

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# PILOT: DeepEn GmbH & Leibniz Institute for Neurobiology

## DeepEn One (NeuroDeploy) | Healthcare, Neuroscience Research, and Deep-Brain Imaging

| HAIR-THIN | 20 USERS | TRL 7 to 8 | HIGH-RES |
|---|---|---|---|
| **MINIMALLY INVASIVE PROBE** | **RESEARCH SCIENTISTS ONBOARDED** | **ADVANCED SYSTEM READINESS** | **CELLULAR SPATIAL RESOLUTION** |
| Ultra-thin optical fiber probes that minimize brain tissue damage during imaging | 20 scientific researchers across 4 lab groups trained during live trials | System progressed to full operational laboratory research deployment | Delivers high-definition imaging of deep brain cell structures in vivo |

### PILOT PROFILE

**EIC Awardee:** DeepEn GmbH

**Solution:** DeepEn One (NeuroDeploy)

**Partner:** Leibniz Institute for Neurobiology (Germany)

**Testing Ground:** Advanced neuroscience research laboratories and core imaging facilities at Leibniz Institute for Neurobiology

**Sector & Challenge Focus:** Healthcare, Neuroscience Research, and Deep-Brain Imaging

### The Challenge

Neuroscientists studying brain diseases (such as Alzheimer's or Parkinson's) need to visualize cellular activity deep inside living brain structures. Traditional brain imaging tools require inserting thick optical tubes, which cause significant brain tissue damage and loss of image clarity, limiting scientific research into deep-brain functions.

### The Solution

DeepEn One is a minimally invasive brain imaging platform. It uses holographic microendoscopes—hair-thin optical fiber probes that can reach deep brain structures with minimal tissue disruption—delivering high-definition cellular imaging in living subjects without causing heavy physical trauma.

### Objectives

The trial aimed to deploy the DeepEn One imaging platform inside active neuroscience laboratories at the Leibniz Institute for Neurobiology. The institute wanted to calibrate optical controls, train researchers, and validate imaging performance across live biological research models.

### Constrains

The optical team had to simplify software controls (the screen interface used by researchers) so that non-specialist scientists could calibrate hair-thin fiber probes quickly without requiring manual optical adjustment.

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### Performance

The platform advanced to Technology Readiness Level 7-8, successfully onboarding 20 researchers across four lab groups. DeepEn One achieved high-definition deep-brain imaging in living models with minimal tissue disruption, demonstrating its superiority over traditional thick probes.

### Partner Operational Improvements

High-definition deep-brain imaging capability, reduced tissue damage in research models, and expanded core facility research capacity.

**SUCCESSFUL PILOT VALIDATION**

DeepEn One is established as an active research tool at the institute. DeepEn is completing live animal research trials, refining software features, and expanding sales to European neuroscience research facilities.

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