NoldusHub

your data in a heartbeat

Multimodal research and human behavior studies

Trends in behavioral research

The field of human behavior research is evolving. Straightforward approaches like single-subject and single-modality studies have brought much knowledge these past decades.

- **Technical developments enable new research methods**

  Digital video technology, eye trackers and tools for measurement of facial expression and physiology have become more powerful, widely available and affordable.

Trends in behavioral research

- **Shift from behavior to drivers**

  The big questions are now shifting from behavior itself to its drivers, and from single subjects to groups, social networks and collaboration.

- **Multimodal research**

  From single-modality studies to multimodal experiments, combining different types of measurements is becoming more common.

Studying human behavior

Challenges in multimodal research

Behavioral researchers go to great length to organize multi-modal experiments, but face multiple challenges as existing solutions fall short in integration, scalability, and accessibility.

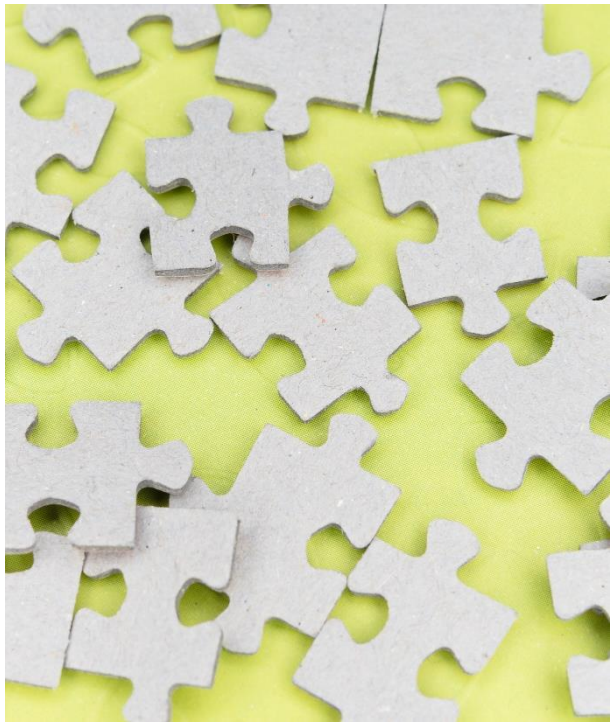
Dealing with complex systems

- Connecting all devices, synchronizing data streams, experiment design and system maintenance require technical expertise
- Each modality requires a separate application from a different manufacturer, often running on a separate computer

Challenges in multimodal research

Other research challenges include:

- Offline data integration and visualization, little to no real-time insight in signal quality
- Local data storage, no remote access, hard to keep track of recorded data
- Data management, security, and privacy
- Not scalable
- Steep learning curve



Research is all about getting results.
How to focus on the participants, and not be caught up in the technology?

Brand-new research tool for human behavior studies

Introducing NoldusHub

All-in-one platform to control, calibrate & monitor behavioral data streams at once.

- Save time and effort
- Easily achieve trustworthy high-quality measurements
- Synchronized results from multiple participants
- Direct insights

NoldusHub

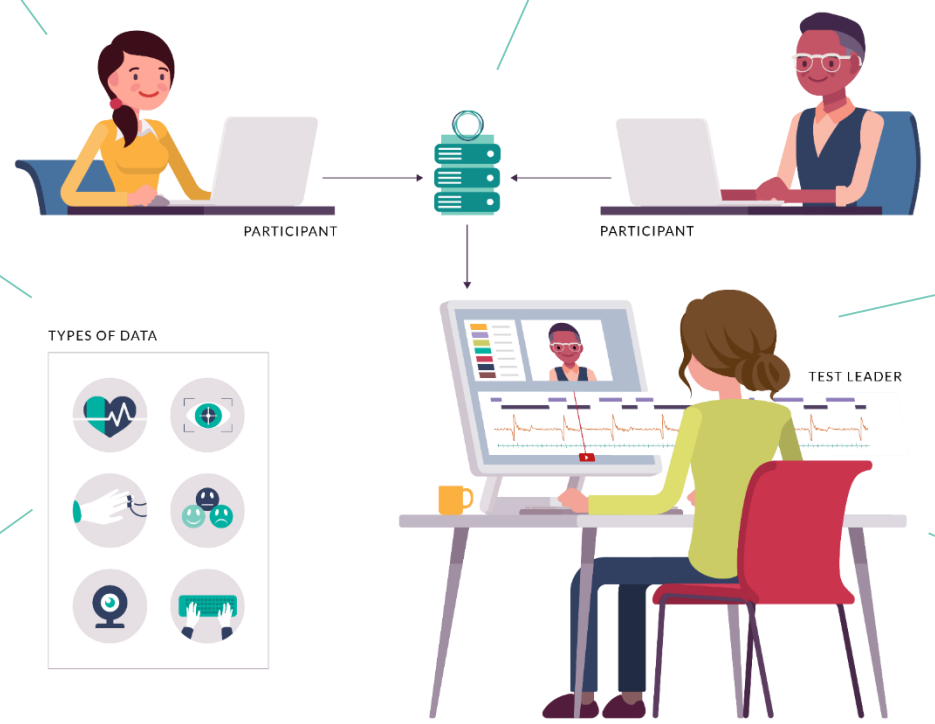
The benefits of using this all-in-one platform

Multiple stations in sync

Safe and secure data storage

Clear data visualizations

Easy and controlled access



Collecting data and synchronizing behavioral input

Future proof

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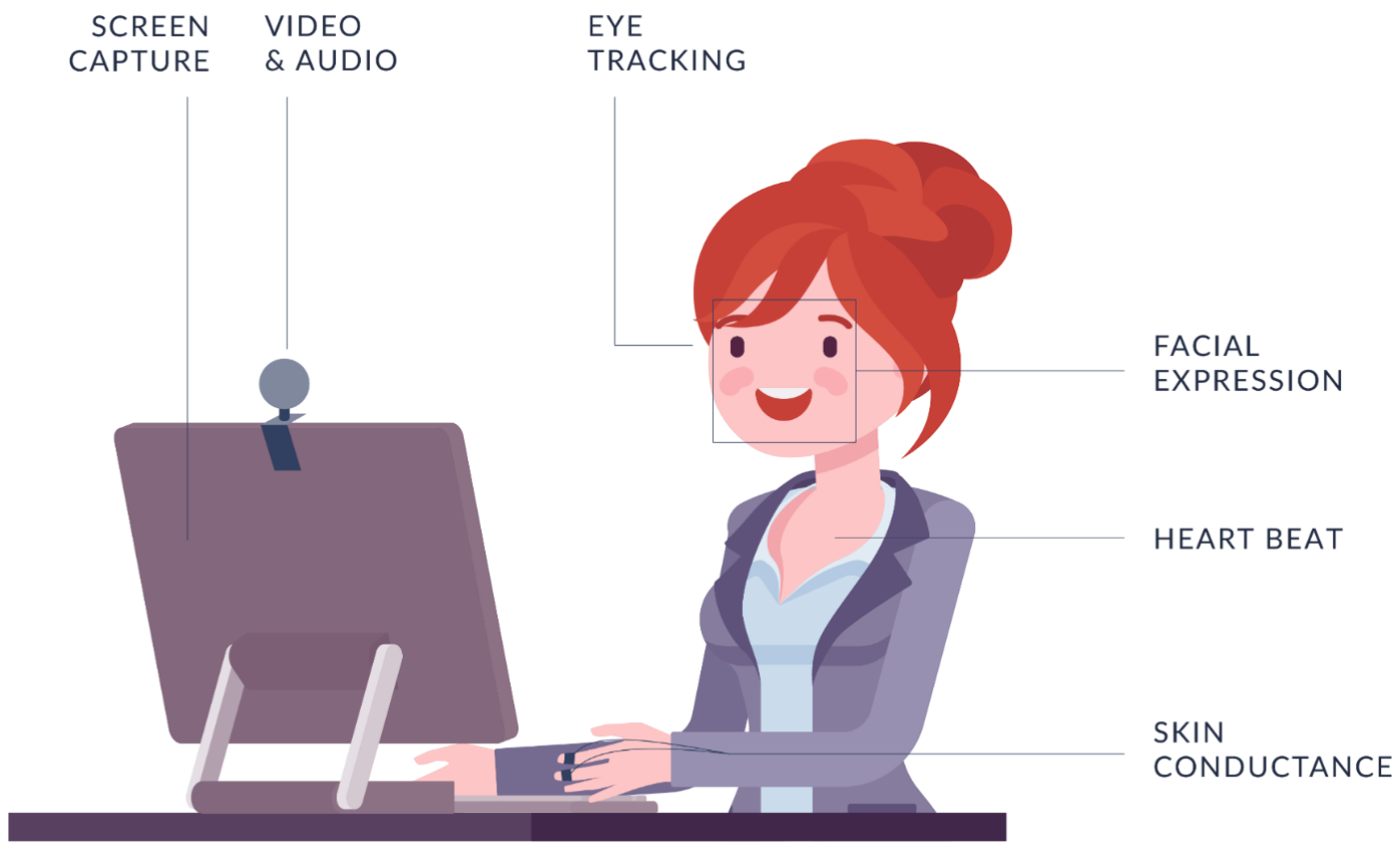
Understanding human behavior



Which data can be collected with NoldusHub, and which devices are used?

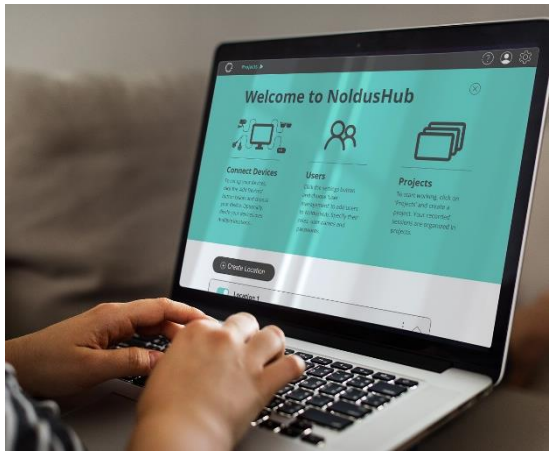
NoldusHub is at the heart of your data collection:

- Facial expressions *(Webcam)*
- Heart rate and Interbeat interval (IBI) – *(ECG and PPG)*
- Gaze overlay and fixation *(Stationary eye tracker)*
- Skin conductance peak rate *(EDA)*
- Screen capture *(Screen capture software)*
- Audio & video *(Webcam)*
- Event marking *(Research leader station)*

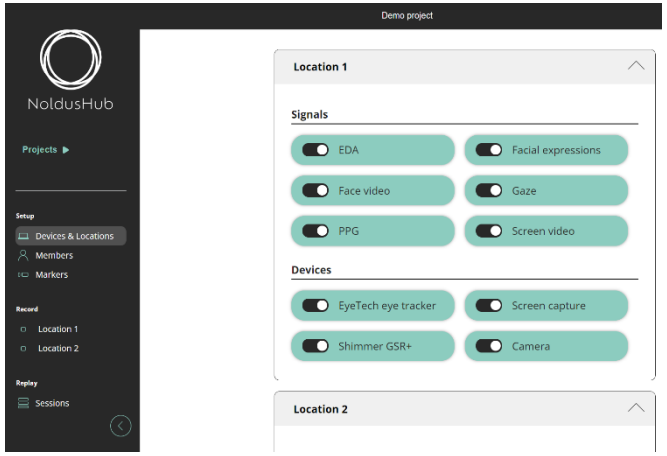
Simple, fast, and easy

Data acquisition made easy

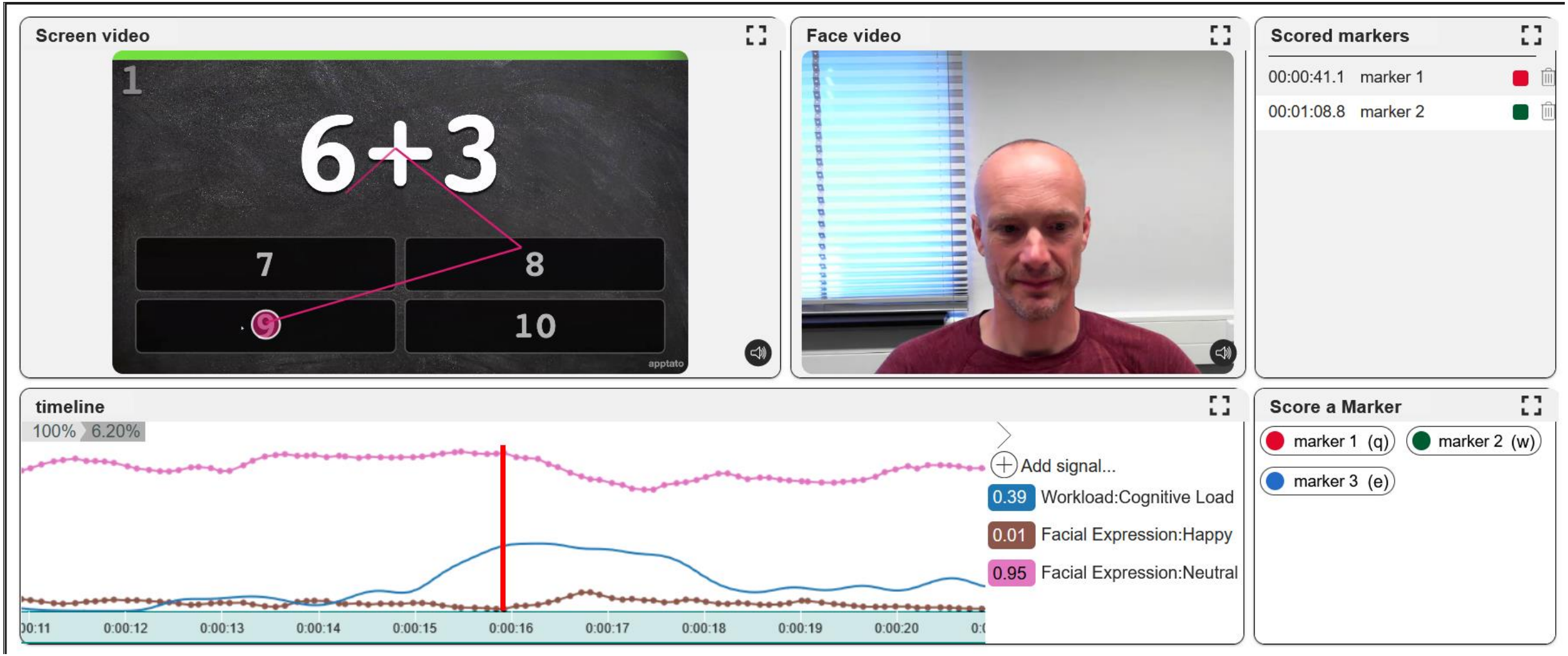
Login
Browser-based login. Login to NoldusHub from anywhere without installing any type of (software) application.



Setup project
Once a project is created, select the signals or devices of choice per recording location (i.e. per participant).



Record
Connect devices, check status, start recording, playback, and visualize projects; all from one PC with minimal effort.


Screen video
1
6+3
7
8
9
10
apptato
Face video
Scored markers
00:00:41.1 marker 1
00:01:08.8 marker 2
timeline
100% 6.20%
0:00:11
0:00:12
0:00:13
0:00:14
0:00:15
0:00:16
0:00:17
0:00:18
0:00:19
0:00:20
Add signal...
0.39 Workload:Cognitive Load
0.01 Facial Expression:Happy
0.95 Facial Expression:Neutral
Score a Marker
marker 1 (q)
marker 2 (w)
marker 3 (e)

Summarized

NoldusHub: Your data in a heartbeat

- Control, calibrate and monitor all behavioral data streams at once
- Start recordings and visualize all synchronized results of multiple participants from one place
- Combine measurements of up to 8 different data streams with just one platform
- Orchestrate your projects and behavioral data, anytime, any place, and on any device.

NoldusHub is under continuous development, based on market and user feedback.

Feedback for the future

- Brain imaging technologies have become more mobile, robust and easy to use
- This increases the options of combining these measurements with other behavioral parameters
- My question to you: where do you see possibilities?

Our track record

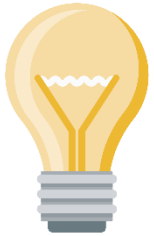
Your partner in behavioral research

30+

years of innovation & experience

60k

users around the globe at 12.000 universities in over 100 countries

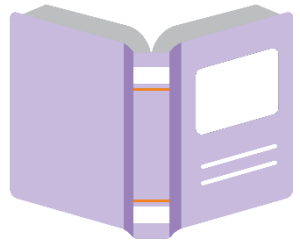


40+

groundbreaking international research projects we invested in

100%

focus on behavioral research in animal and human domain

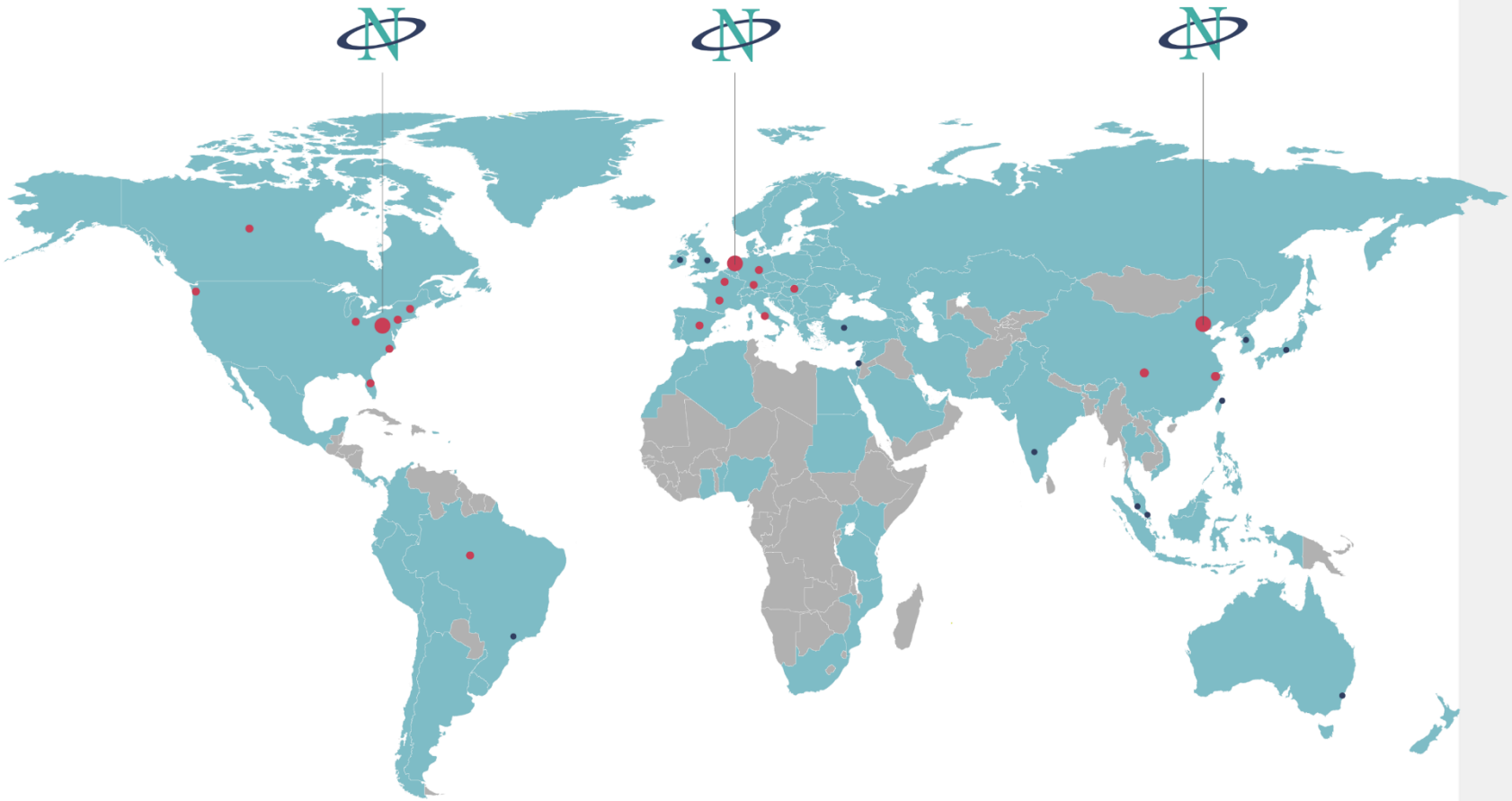


35k

scientific publications

About us

Noldus Information Technology



We dedicate our 30+ years of experience and expertise in developing complete acquisition solutions focused on obtaining high quality data as automated as possible.

We like to simplify the acquisition process and make sure to present synchronized and high-quality data in a clear way.

- We build lasting relationships
- We cherish creativity
- We contribute responsibly
- We believe in innovation