



Application of LumEnActive for signage and route guidance

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Background

➤ **Development of user interface technologies**

LumEnActive as a product, several technologies as prototypes

User interface consulting (VW, Sony, Daimler, ...)

➤ **Principal engineer and project leader**

Sony Corporate Labs Europe (Stuttgart)

➤ **Dr. phil from Stuttgart University (IMS)**

Automatic speech recognition, prosody & semantics

➤ **Dipl. Inform from Stuttgart University with excellence**

Dr. Stefan Rapp

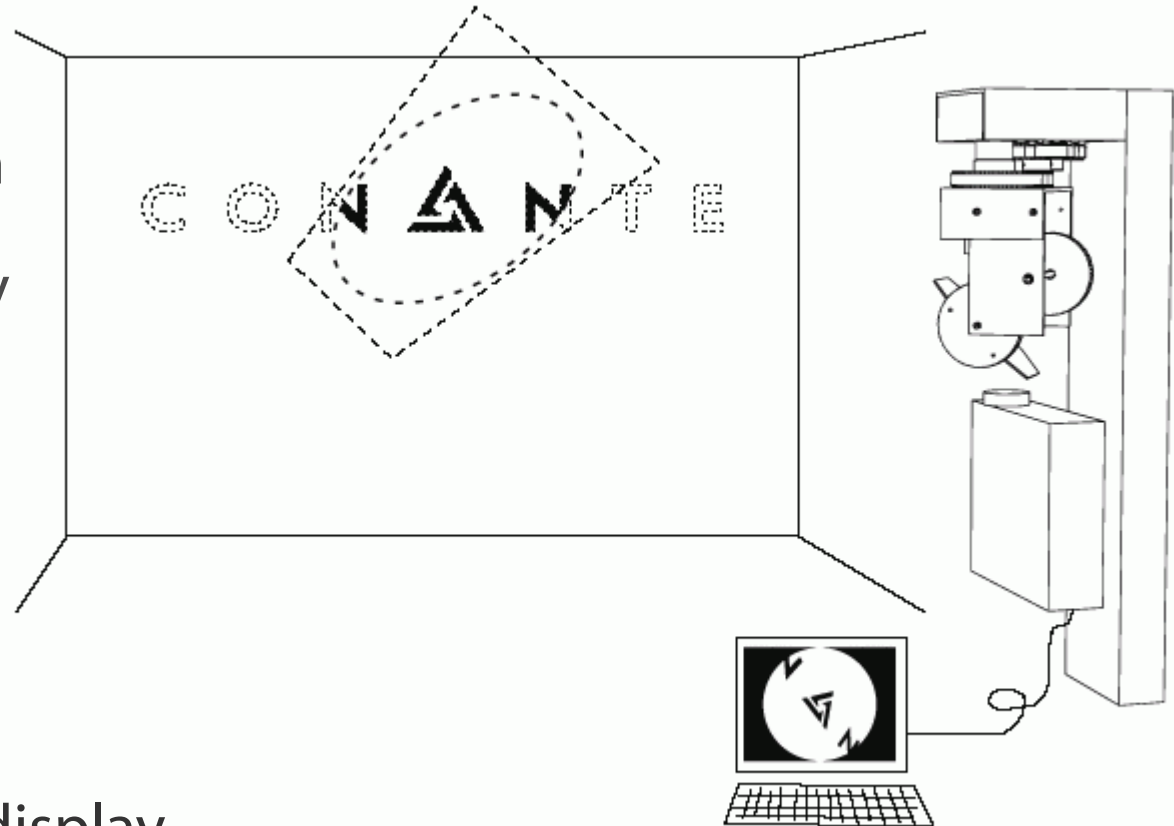
Why I am here

- ▶ Background in user interfaces and consumer electronics ...
... here to discuss with the sign experts!
- ▶ Present a new display device: LumEnActive
 - ▶ based on digital projection
 - ▶ alternative to other display technologies such as LCD
 - ▶ allows new approaches
- ▶ Applications as starting point for joint projects – not a report on already accomplished work

LumEnActive

What is it?

- Steerable Projection
 - Projection to any spot in the room
 - Spotlight Navigation paradigm



- Generic projection display, ready for signage applications
- Other uses in billboard advertising, museum didactics, scientific visualization, teaching...

Applications for signage and wayfinding

- ▶ Projection to places that are difficult for other displays
 - ▶ Historic buildings – no drilling, no wiring on walls
 - ▶ Floor
 - ▶ Changing locations
- ▶ Changing content
 - ▶ Meeting room allocation
 - ▶ Changing situations
 - ▶ Personalized signage

Applications

Changing situations – smart cities



Applications

Changing situations – smart cities



Applications

Changing situations – smart cities

- ▶ Change between commercial digital signage and emergency signaling
 - ▶ Utilize (commercial) display infrastructure to enhance visibility of emergency signage
 - ▶ Could react to sensor information or control room orders (guiding up or down, strong/urgent or calm/kind appeal)

- ▶ Project SOFIA (Smart Objects For Intelligent Applications)

SOFIA

Smart Objects For Intelligent Applications

- ▶ Vision of smart spaces – in the 'embedded' world
 - ▶ from smart personal space to smart indoor to smart cities
 - ▶ Sharing of information & interoperability between devices

▶ <http://www.sofia-project.eu>



SOFIA

Smart Objects For Intelligent Applications

- ▶ Targets open source platform
 - ▶ Open Innovation Platform (OIP)
 - ▶ Application Development Kit (ADK)
- ▶ First results already published
 - ▶ <http://en.wikipedia.org/wiki/Smart-M3>
 - ▶ <http://sourceforge.net/projects/smart-m3/>



Applications

Smart signage

- ▶ Personalized signage
- ▶ Combination of identification (RFID) and digital signs (LCD)
- ▶ <http://www.smartsigns.nl>

**smartsigns**

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Smart Signs voor op kantoor

Met zaalreserverings- en bewegwijzerinformatie vinden bezoekers en medewerkers in uw gebouw eenvoudig de weg naar de door hen gereserveerde ruimte.

Via intelligente beeldschermen wordt men geïnformeerd over de route en zaalreserveringen.

▶ [Meer over Smart Signs voor op kantoor](#)



Partners van Smart Signs

Smart Signs werkt samen met gerenommeerde en toonaangevende

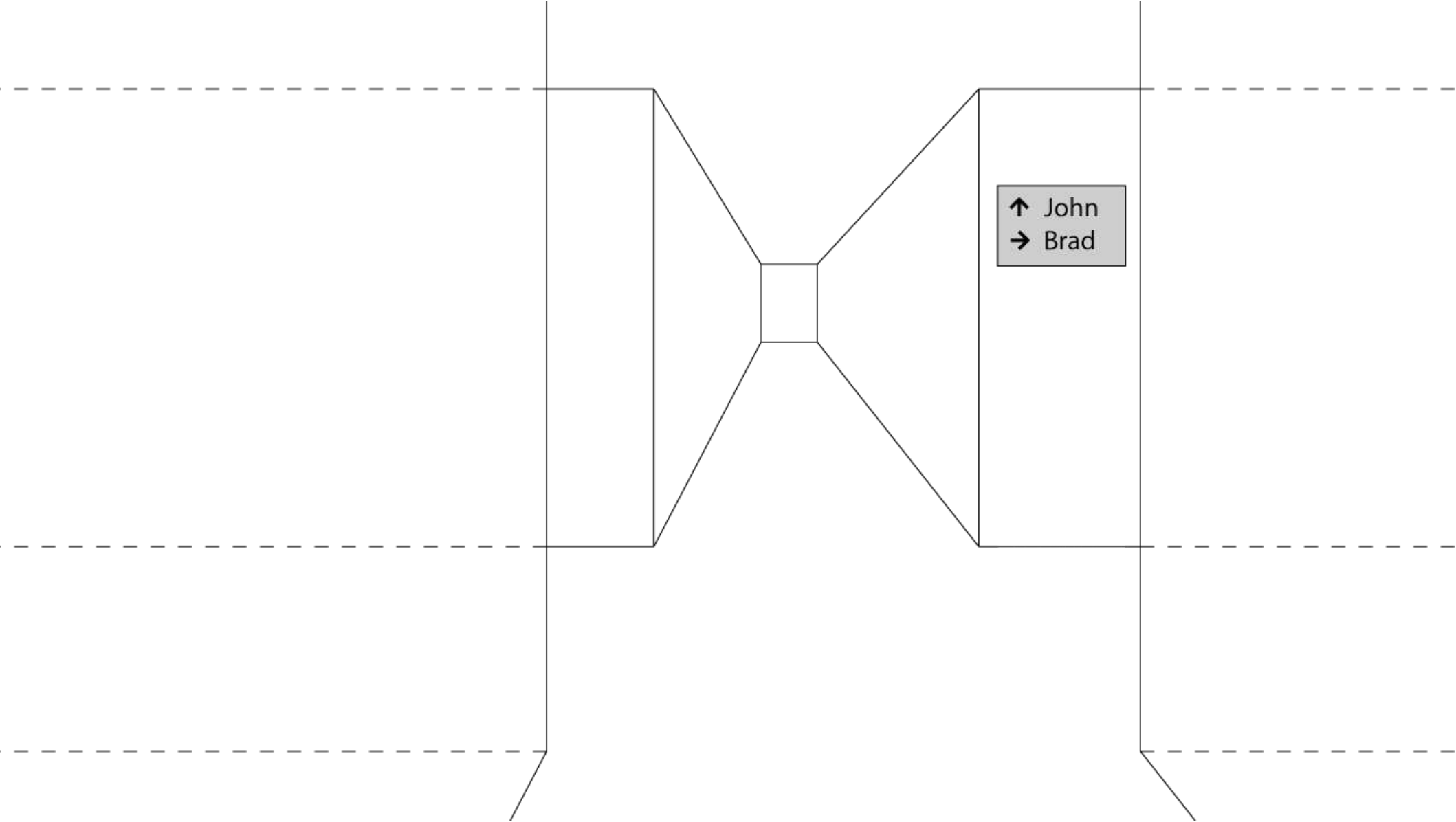
Persoonlijke en dynamische wayfinding

Duidelijke bewegwijzering in gebouwen is heel belangrijk. Met name voor grote gebouwen die verschillende afdelingen of bedrijven

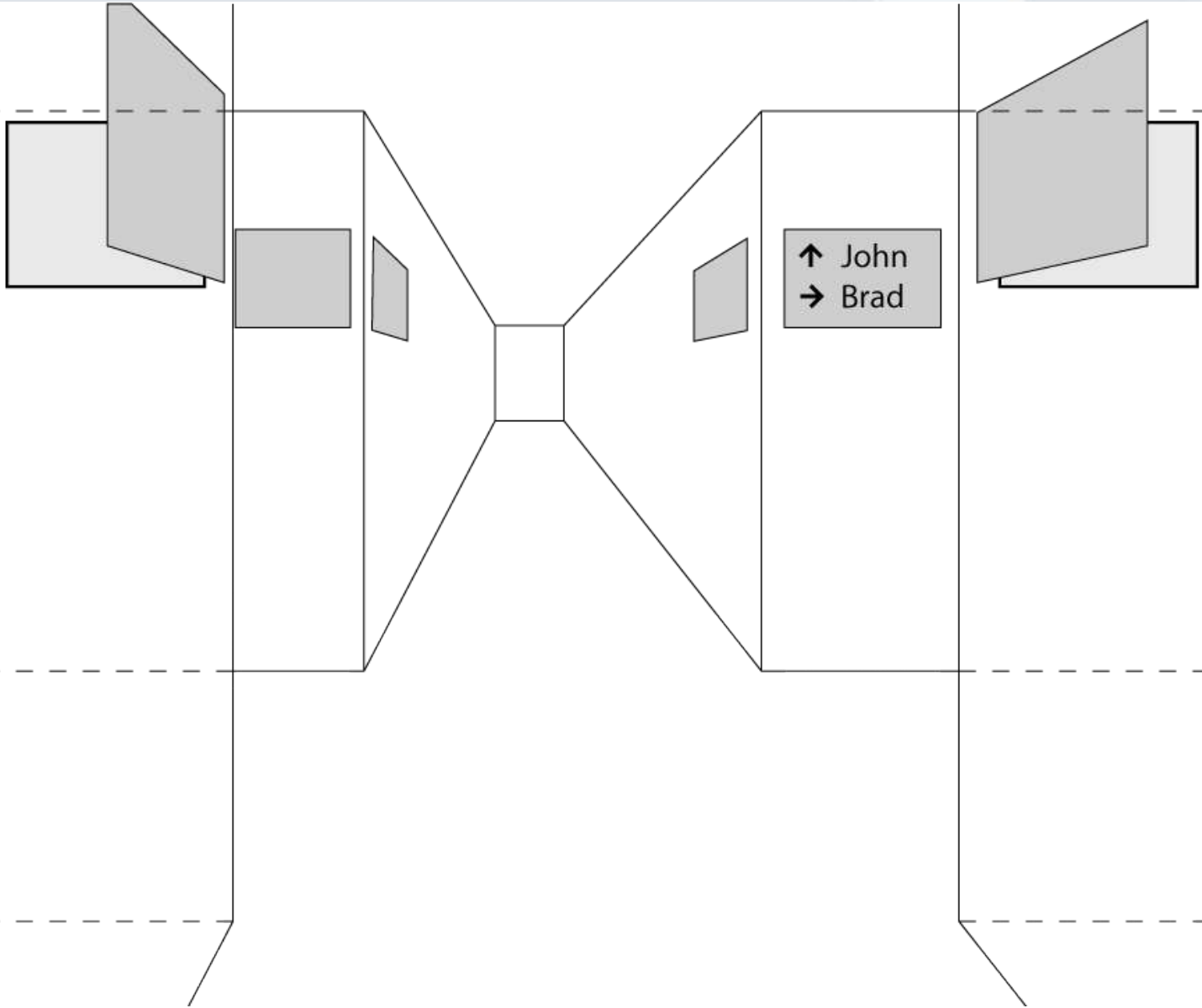
Toepassingen

▶ [Kantoren](#)

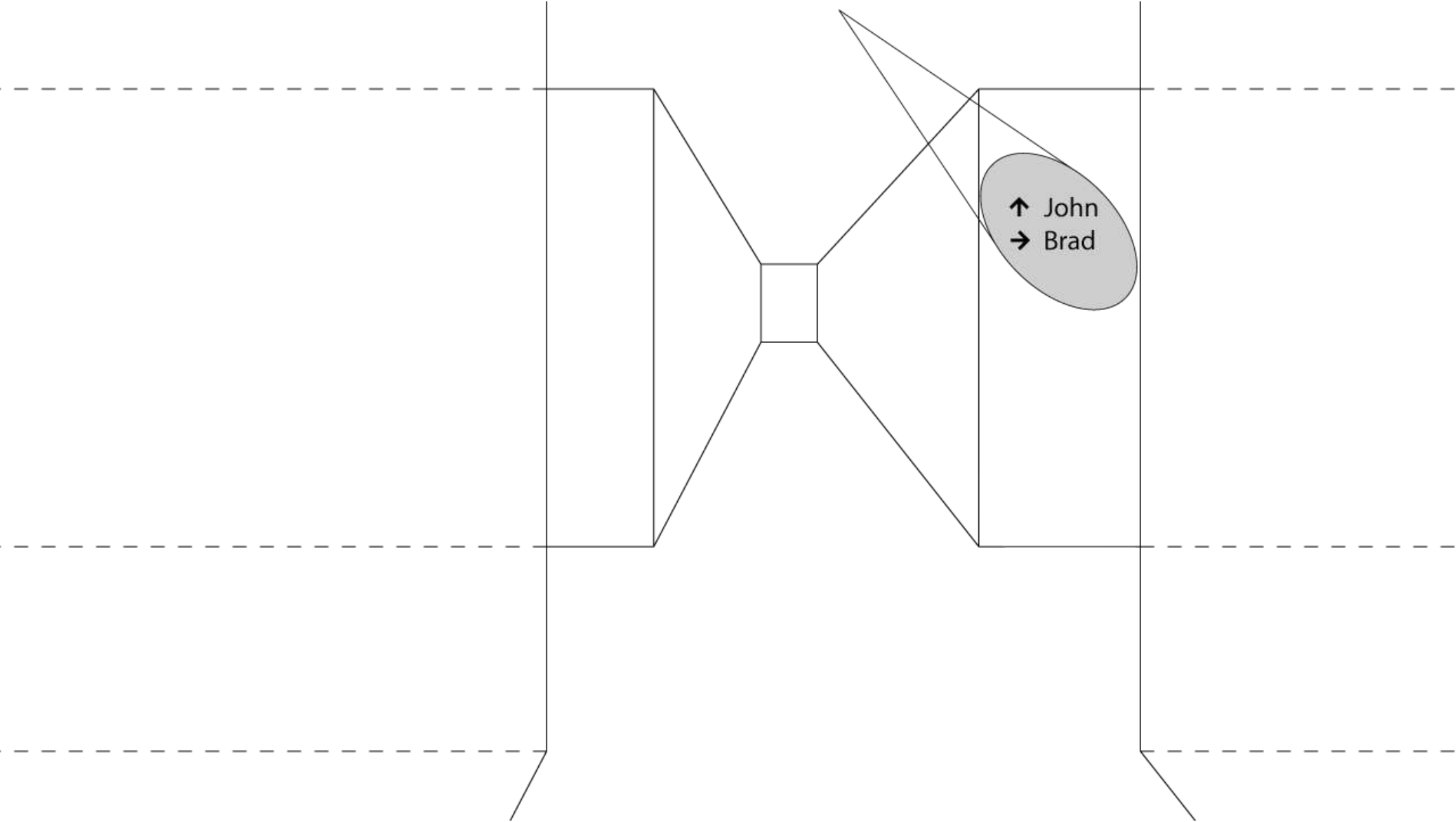
Applications
Smart signage

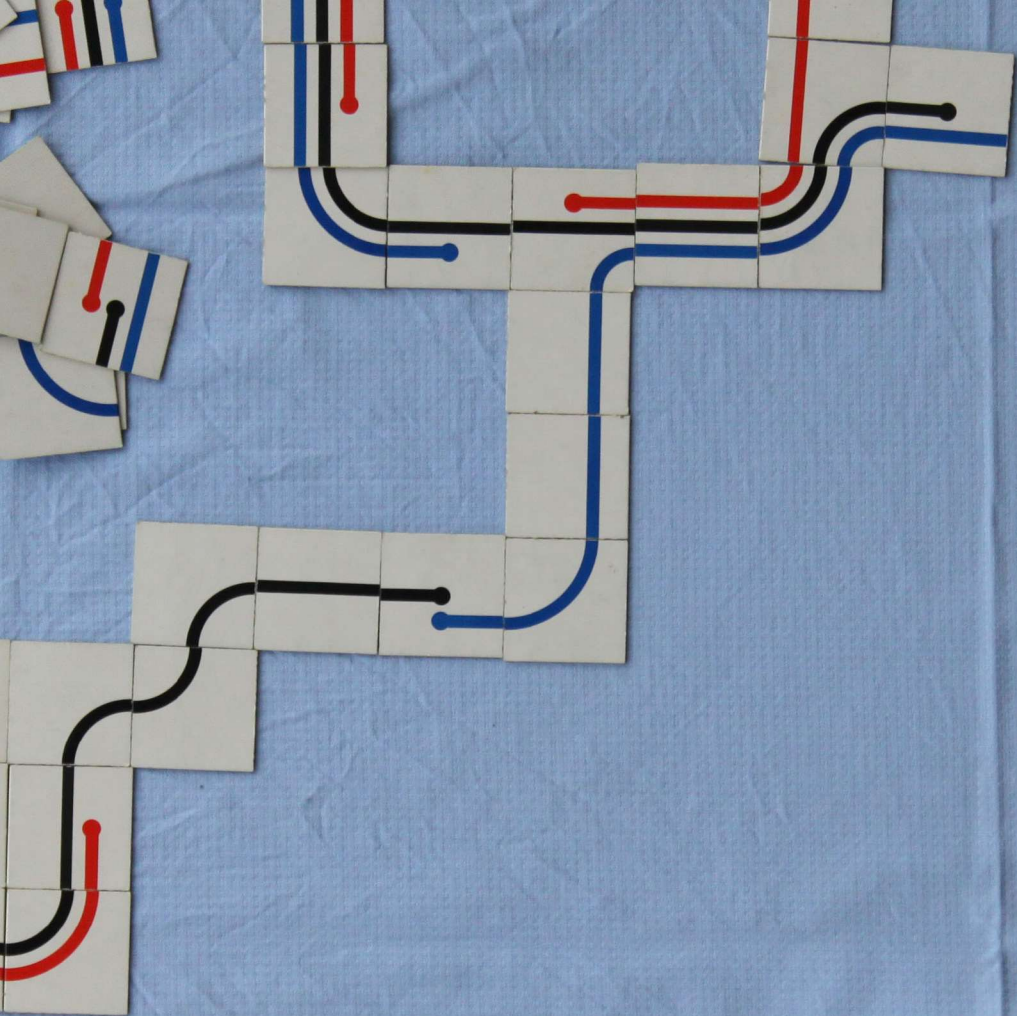


Applications
Smart signage



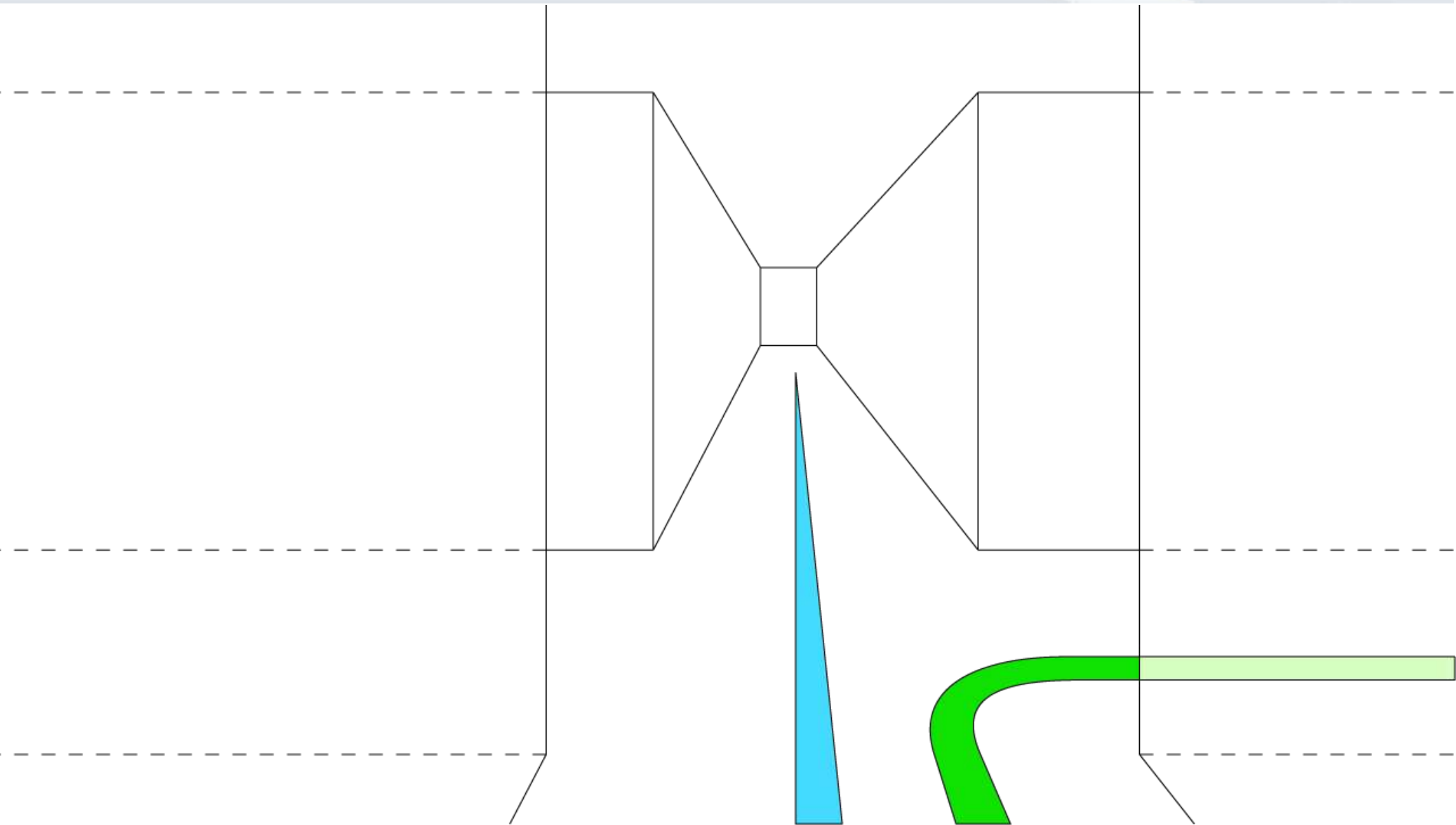
Applications
Smart signage





Applications

Traces



Applications

Traces



Applications

Traces



Applications

Traces

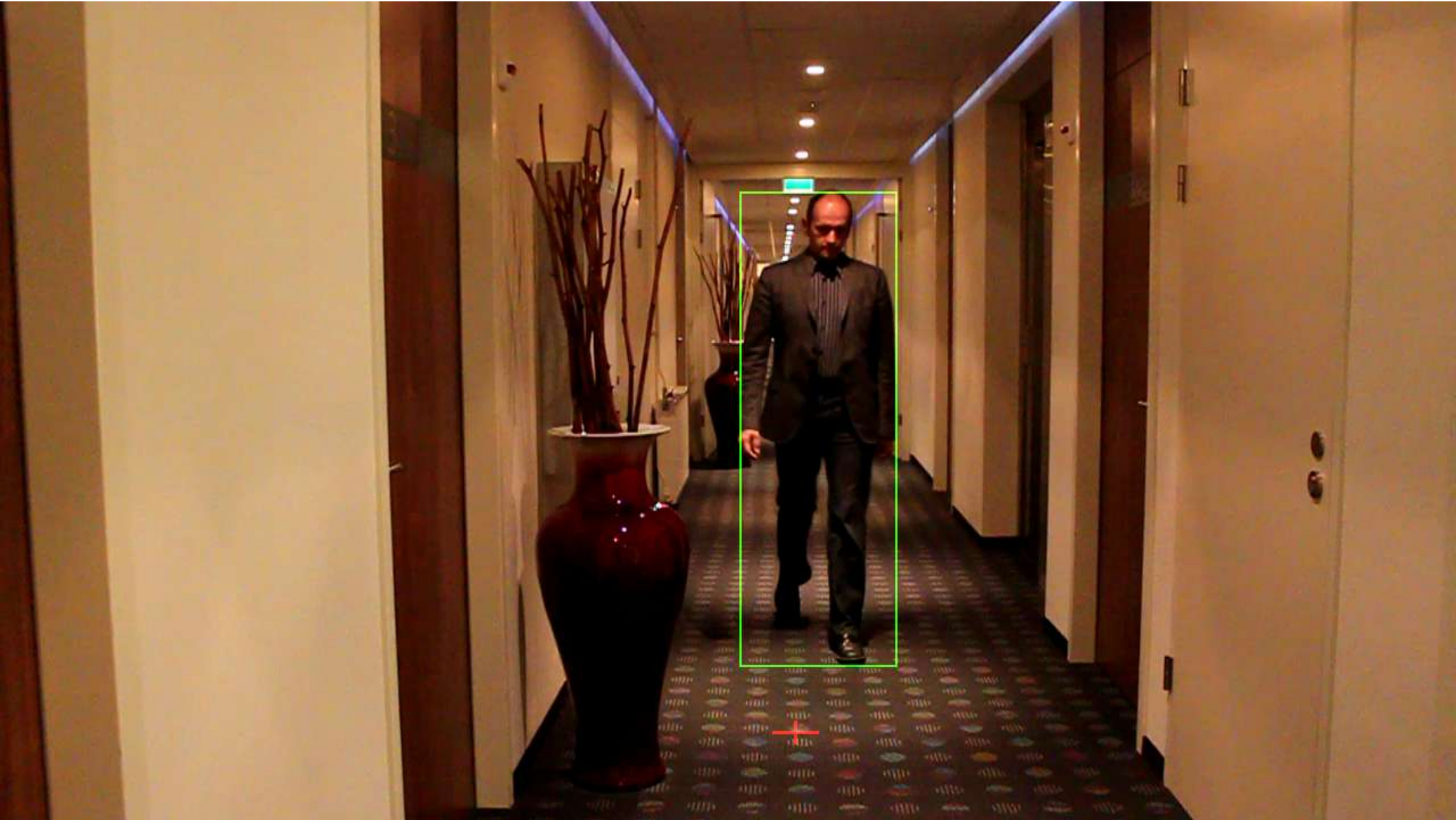


Applications

Traces



Applications
Traces



Applications

Traces



Applications

Traces

- No indirection – no ambiguity
- Users 'watch their step'
- Single LumEnActive device can span a large area
- Any tracking solution, including RFID and video-based
- Only partially covered: multi-user behaviour, occlusion by user

Conclusion

- ▶ New display device: LumEnActive
- ▶ 3 Applications
 - ▶ Change between commercial digital signage and emergency signaling
 - ▶ Substituting several LCD to account for different approaching direction
 - ▶ Traces: show information on the path way
- ▶ Simulations or prototypes -> real pilot applications?

Thank you for your attention!

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