



isoe11 11th INTERNATIONAL
SYMPOSIUM ON
DIGITAL EARTH

Florence (Italy), September 24 – 27, 2019

Digital Earth in a transformed Society

Digital Earth in a Transformed Society

The Digital Twin and the Smart City Dashboard of Amsterdam: a Digitranscope Experiment

Henk J. Scholten

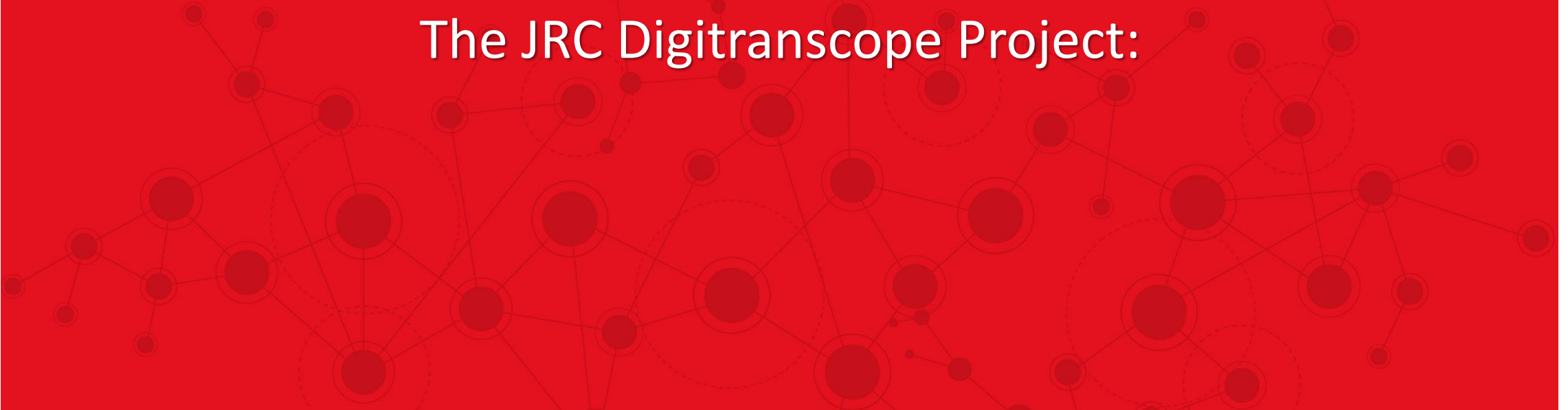
Geodan

SpinLab, Vrije Universiteit

JRC, Ispra

How to manage the Process of Digitalization

The JRC Digitranscope Project:





*'We need a Digital Earth.
A multi-resolution, three-
dimensional representation
of the planet, into which we
can embed vast quantities of
geo-referenced data'*

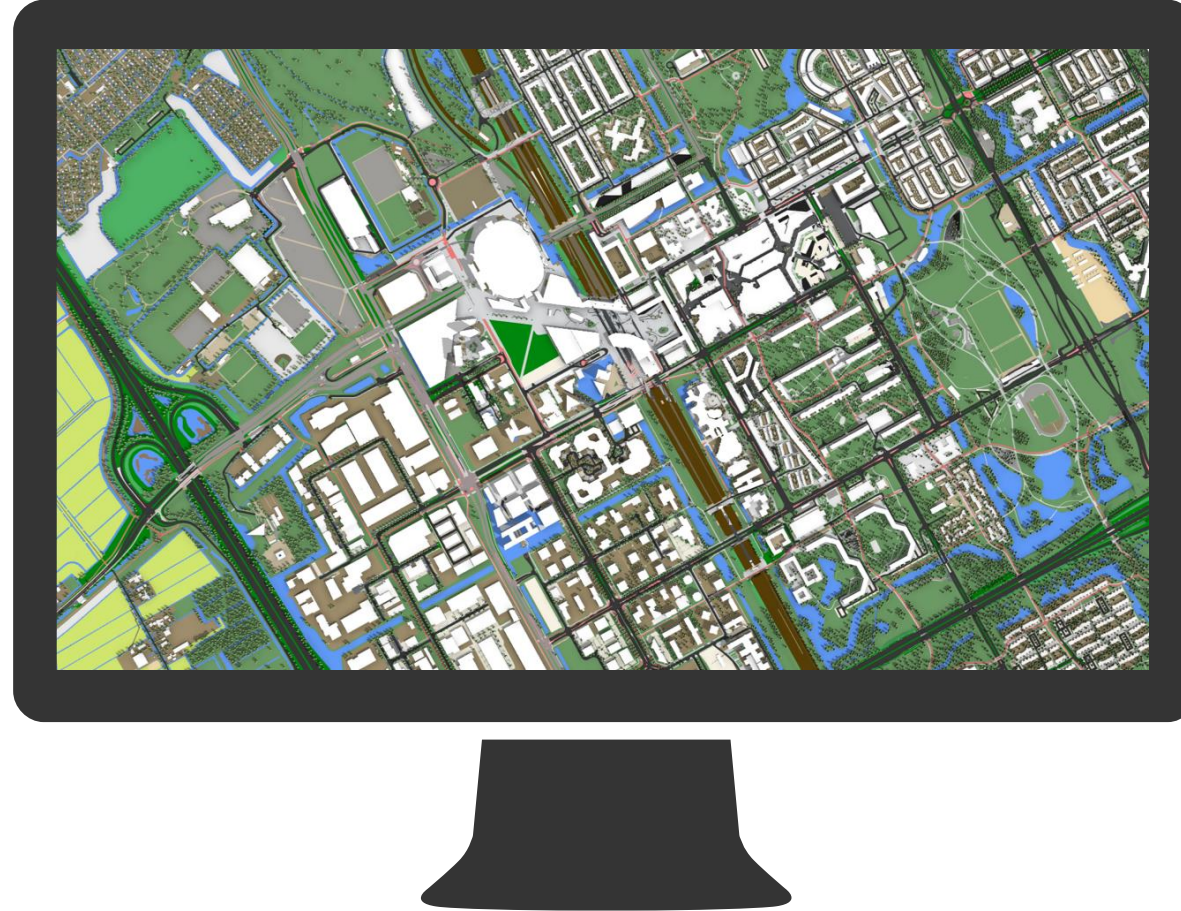
Al Gore, 31 Jan 1998



‘Obviously, no one organization in government, industry or academia could undertake such a project. Like the World Wide Web, It would require the grassroots efforts of individuals, companies, university researchers, and government organizations.’



Amsterdam South East transformed into a Smart Digital Twin



Data Amsterdam South East

- **AHN3**

- **BGT**

- Water	187.000 m ²
- Green space	4.600.000 m ²
- Built-up	1.900.000 m ²
- Infrastructure	2.800.000 m ²
- Buildings	x 8.579
- Trees	x 24.261
- Street lights	x 9.433

A 3D visualization of the Amsterdam South East area, showing a dense urban layout with buildings, green spaces, and water bodies. The visualization is overlaid on a red border. The data is derived from open data from the Basic Registries (BGT and AHN3).

3D canvas of Amsterdam SE
Based on Open Data
from the Basic Registries

3D Canvas of Amsterdam South East, the fundament for every action



Digital Twinning for livable smart cities

Utilizing the Benefits of the Digital Twin

- How do we make the step to the next Level
- From data to information to action
- Digitally transforming data into custom information services for stakeholders in real time: The Amsterdam Dashboard
- City Processes can be monitored in their own context
- Citizens Information Services
- In real time

Data Amsterdam South East

- All Key Registrations
 - All Open Data
 - Sensor Information
-
- Theme: Energy Transition
 - Theme: Mobility
 - Theme: Human Environment

An aerial photograph of the South East district of Amsterdam, overlaid with a 3D visualization of data. The visualization consists of numerous small, colored dots (green, yellow, orange, and red) scattered across the urban landscape, representing various data points. The dots are concentrated in certain areas, particularly around the central canal and the large white building. The entire visualization is enclosed in a red rectangular border.

3D canvas of Amsterdam SE
Based on Open Data
from the Basic Registries

Dashboard to monitor the processes

- How to develop a Dashboard?
 - From a technical perspective
 - From a User Interface perspective
 - From a scientific perspective
- Which themes do we want to visualise?
- How to visualise:
 - Location
 - Key Performance Indicators
 - Charts, Video, ...
- Lets have a look!





Smart Stadium - User Requirements

JOHAN CRUIJFF
ARENA

A Smart Stadium...

Will be supported by a data driven **digital twin** to optimize the processes



- Physical entities
- Sensing network



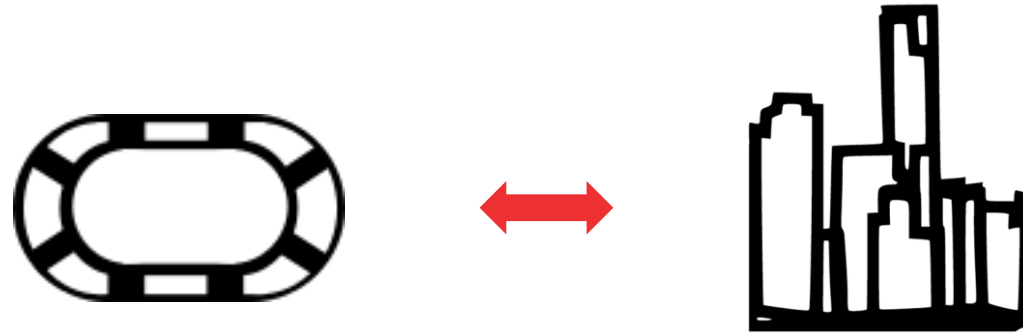
- Monitoring
- Alarming
- Predicting



- Anticipating
- Interventions
- Improvements

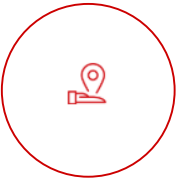
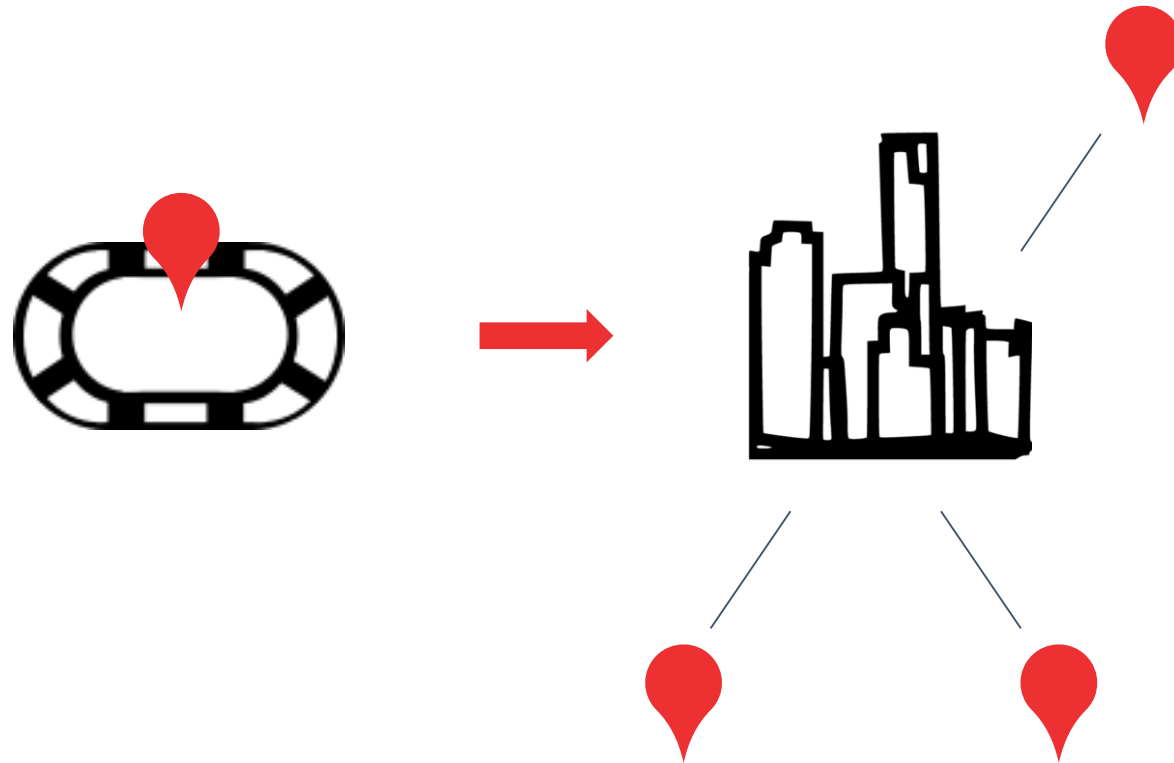
Scalability

Smart Stadium: Living Lab for smart city



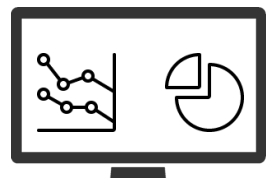
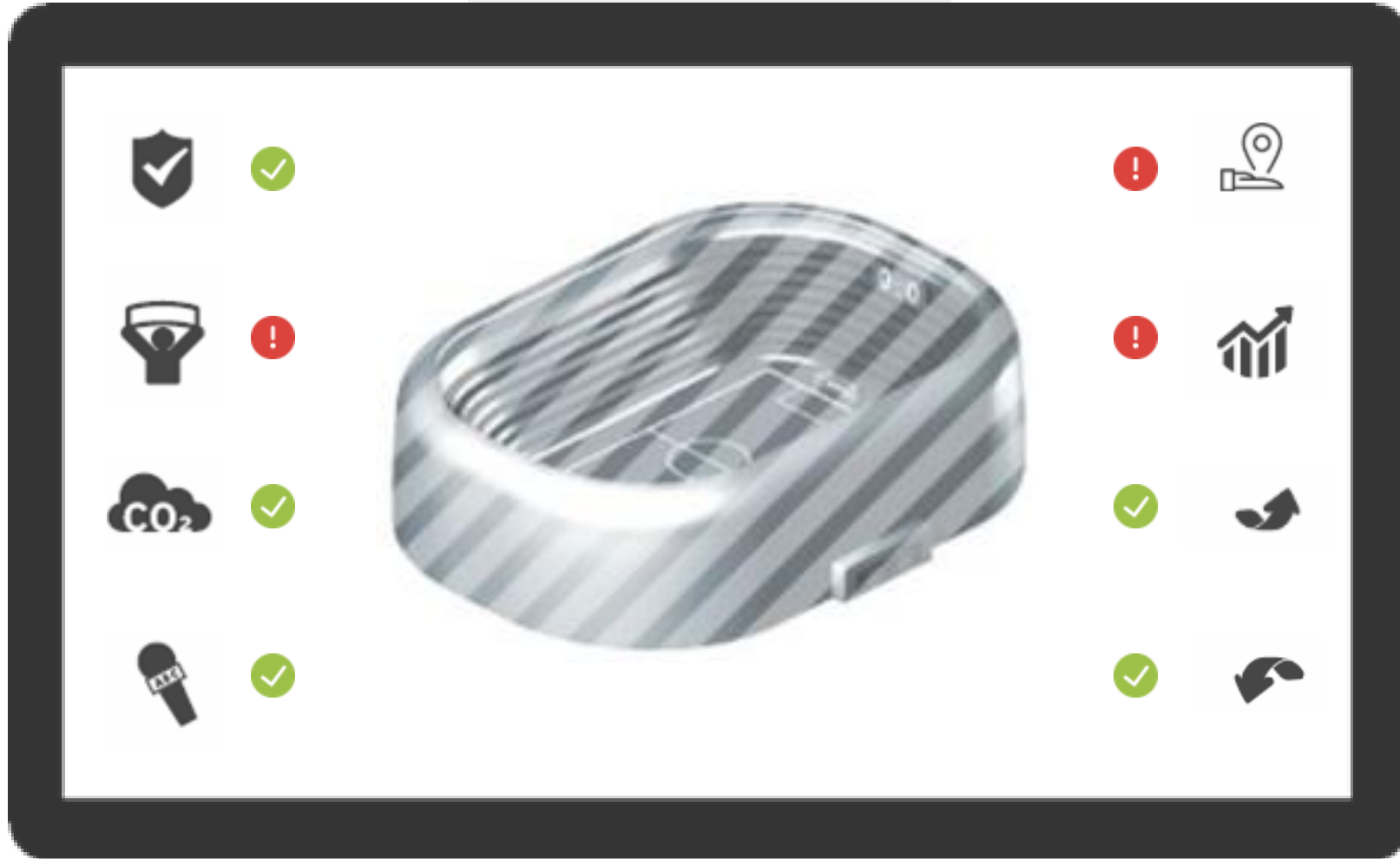
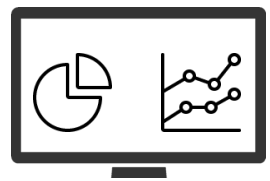
Scalability

Smart Stadium: Living Lab for urban events



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Realtime Overview Of Processes



What are the lessons learned?

- DIGITRANSSCOPE
 - What has to be the role of the Government?
 - Datagovernance!
- We can measure almost everything
 - How to make use of all this data
- Questions: Henk@Geodan.nl