



3DEXPERIENCE®

The Future of Smart Cities with 3D Technologies

- what impact on cities, our life and the businesses?

Shoji NOZAKI

Technical Director,
3DS Business Transformation Japan
Dassault Systemes K.K.

Agenda

Dassault Systemes Overview

Smart City (Virtual Singapore)

Smart Mobility (AKKA Technology + Rennes City)

Dassault Systemes Overview



a Scientific company

Combining **Science, Technology** and **Art** for a sustainable society



15,000 passionate people

- 124 nationalities / 179 sites
- One global R&D / 64 labs
- Game changing **3DEXPERIENCE** solutions



210,000 enterprise customers

- 12 industries in 140 countries
- 25 million users



12,600 partners

- Software, Technology & Architecture
- Content & Online Services
- Sales
- Consulting & System Integrators
- Education
- Research



Long-term driven

- Majority shareholder control
- **Revenue:** €3,065.6 million*
- **Operating margin:** 31.2%*

* Figures as of FY 2016 / Non-IFRS

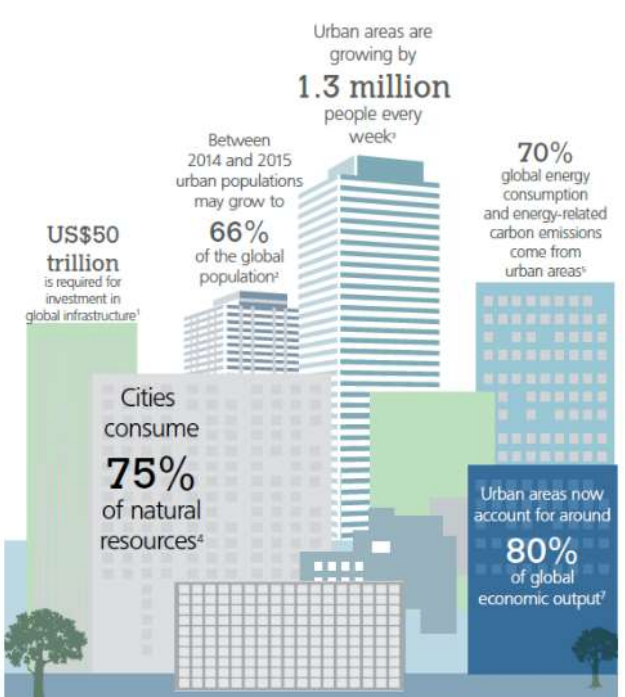
Agenda

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Smart, safe, attractive & resilient Cities




Source: BRE Trust 2014 - UK.



Attractive City for all



How can we anticipate and develop future of cities?



City of Singapore
5,5 million inhabitants / 719 km²



Virtual Singapore Project

Transforming Singapore into a 3D Virtual City

Virtual Singapore program | Confidential Information | 11/10/2017




NATIONAL
RESEARCH
FOUNDATION
PRIME MINISTER'S OFFICE
SINGAPORE

GOVTECH
SINGAPORE

SLA
SINGAPORE
LAND AUTHORITY

DASSAULT
SYSTEMES | The 3DEXPERIENCE® Company

A wide-angle photograph of the Singapore skyline at sunset. The sky is filled with soft, golden light and scattered clouds. In the foreground, the dark water of the bay reflects the city's lights and the sky. The Marina Bay Sands hotel, with its iconic three towers and skybridge, is prominent on the left. To its right, the Singapore Flyer, a massive Ferris wheel, stands tall. The rest of the city's skyscrapers are visible in the background, their silhouettes softened by the low sun.

Enabling collaboration and governance between all City actors,
to allow to build a better and more sustainable future.

What is Virtual Singapore?

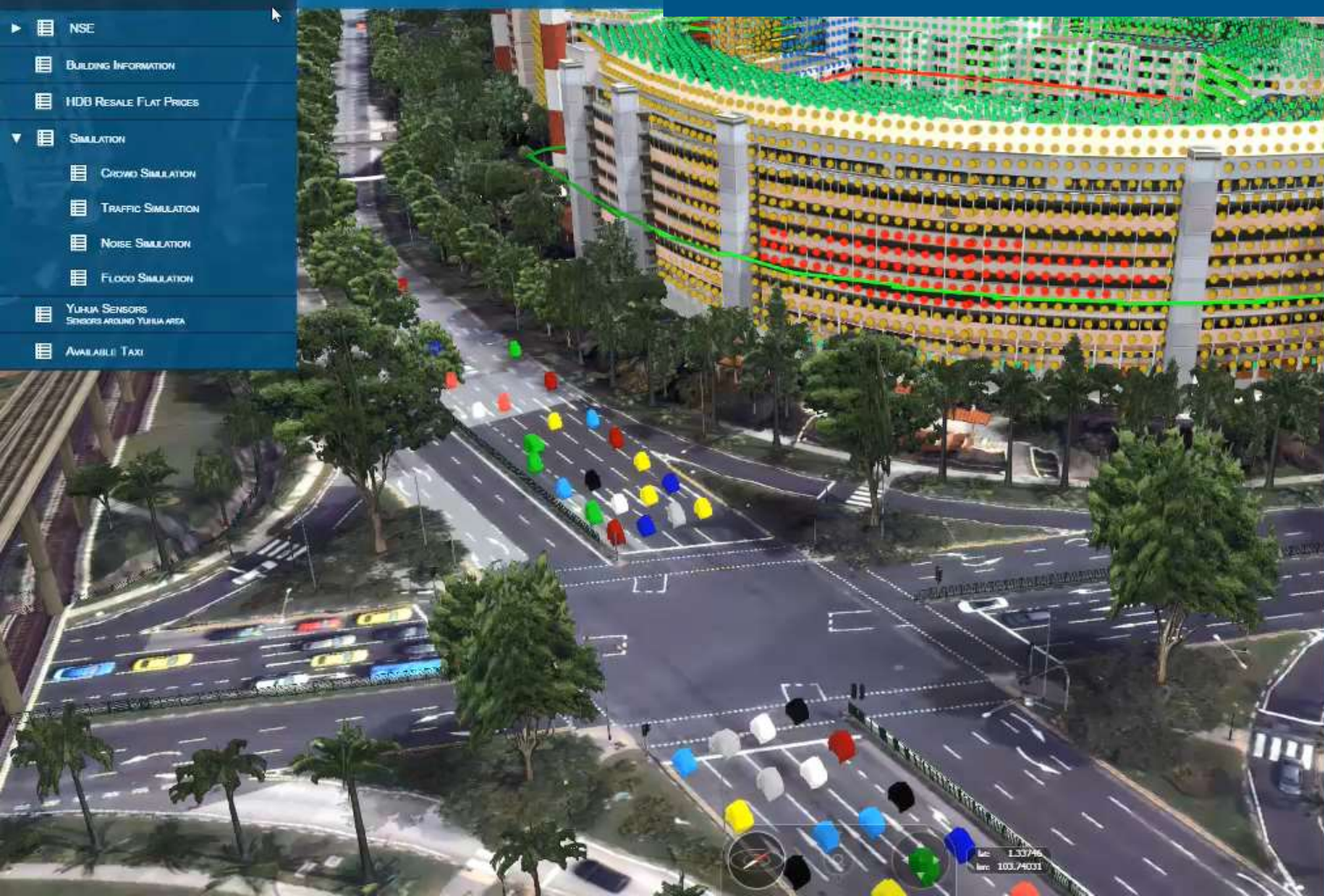
Vision: National 3D Platform of Comprehensive Digital Model



4 STAKEHOLDER GROUPS

- ❖ **Citizen & Residents of Singapore**
 - Co-creation
 - C-to-c-sharing
 - C-G Engagement
- ❖ **Government**
 - Service Delivery
 - Policy
 - Decision Making
- ❖ **Businesses**
 - Biz Analytics
 - Resource Management & operations
 - Location Planning
- ❖ **Academic & Research**
 - Modeling & Simulation
 - Research & Development
 - Innovation

- ▶  NSE
-  BUILDING INFORMATION
-  HDB RESALE FLAT PRICES
- ▼  SIMULATION
 -  CROWD SIMULATION
 -  TRAFFIC SIMULATION
 -  NOISE SIMULATION
 -  FLOOD SIMULATION
-  YURAJA SENSORS
SENSORS AROUND YURAJA AREA
-  AVAILABLE TAXI








Traffic Simulation

Time: 2016-10-21T18:58:49.397Z

Speed:

Mode: Randomize Callgridbot

Vehicle Statistics

 Cars	276
 Heavy Goods Vehicles	3
 Buses	0
 Trams	0
 Bikes	0
Total	279

lat: 1.33796
lon: 103.74031

- ▶ Introduction
- ▶ Improving Accessibility
- ▶ Improving Pedestrian Overhead Bridge
- ▶ Rejuvenation of Park
- ▶ Inclusive Collaboration



Improving accessibility of the community center

[View Shortest Path](#)

[View Wheelchair Path](#)

Distance: 1072 meters
Time Taken: ~18 minutes

3DXCity

- Content
- > Buildings LODs
 - > Yuhua
 - > Garden - Content
 - > POB Content
 - > Garden - Renovation
 - > POB Renovation



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Automotive Industry: Mega Trends

Zero Emission

From Fuel to Hybrid & Full
Electrified Powertrain



New Mobility Usages

From Driver Support to **100% Autonomous**

From Ownership to **Sharing & On-demand**



Fast-paced Ecosystem(s)

From Industry Incumbents to **new Startups & Labs starting from scratch**



Development of Smart Mobility



Model Based System Engineering



Virtual Model Simulation



Virtual Experience



Integration of Mechanical,
Electrical and Software

Reproduce product
behavior in virtual world

Consumer experience in
Immersive environment

Autonomous Vehicle Development: AKKA Technologies

- Concept car development of Autonomous Connected Vehicle “Link & Go”
- Using DS collaboration platform and software through cloud environment for Design, Simulation and Validation.
- Study the autonomous taxi services in virtual city of Rennes

Connected Vehicle “Link &Go” Project: Partnership between AKKA and Dassault Systemes

3DEXPERIENCE | 3DDashboard Akka Link and GO 7

Home Akka Research Video StepByStep Akka Link &Go Olivier Intro Save New Tab AKKA Project

Francis-Louis DEWHYTER

Projection

ELEC_ARCHI - Fordrasse

MACROPLANNING Guya... less than a minute ago

ASTUTE Guyancourt less than a minute ago

VEHICULE_PROTOYPBL... less than a minute ago

DESIGN Guyancourt less than a minute ago

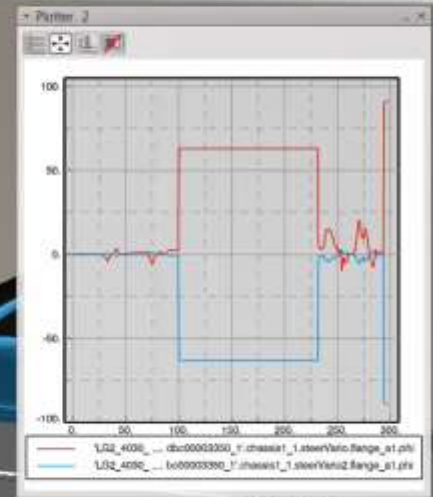
MECA_ARCHI Guyancourt less than a minute ago

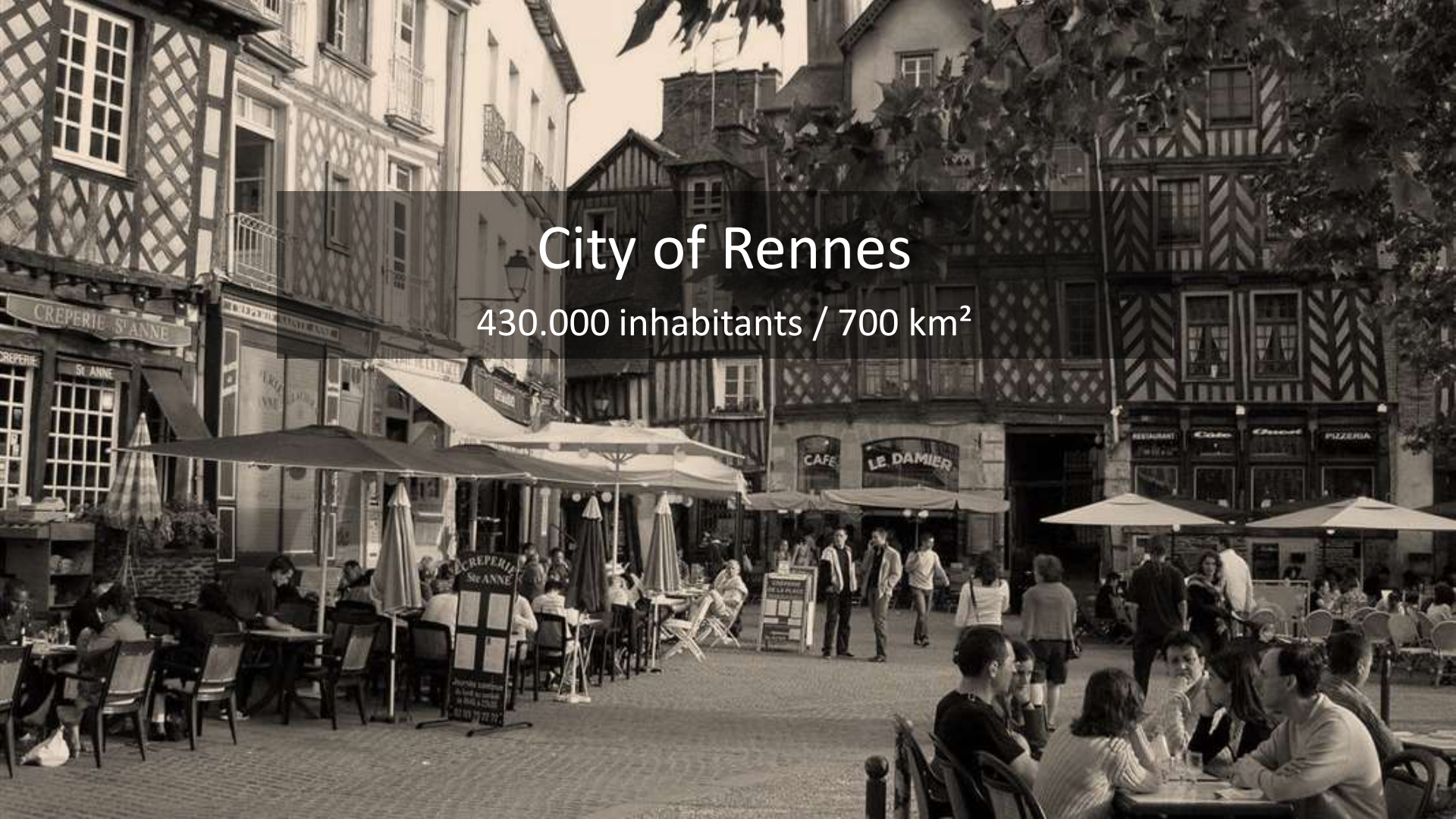
Run Your App - Link and GO Project Metrics

13688 coffees 120 purchase orders 14 months project

Views

The screenshot displays the CATIA simulation environment. On the left, a hierarchical tree lists components under 'Logical' and 'Physical' categories. The 'Logical' section includes 'LG2_4000_V2 A.1' and its sub-components like 'Logical Main View', 'Context dynamic modeling', and various system and component models. The 'Physical' section lists assembly components such as 'ACS LinkAndGetw A.1', 'ACS DeadEnd A.1', and multiple 'ACS Parc' and 'ACS Cross' parts. The main 3D view shows a white car with a sensor on top, positioned on a road between two blue cars. A 'Modeling Versioning' dialog box is open, showing options to update dependencies on attached behaviors. The bottom toolbar contains various simulation and design tools.



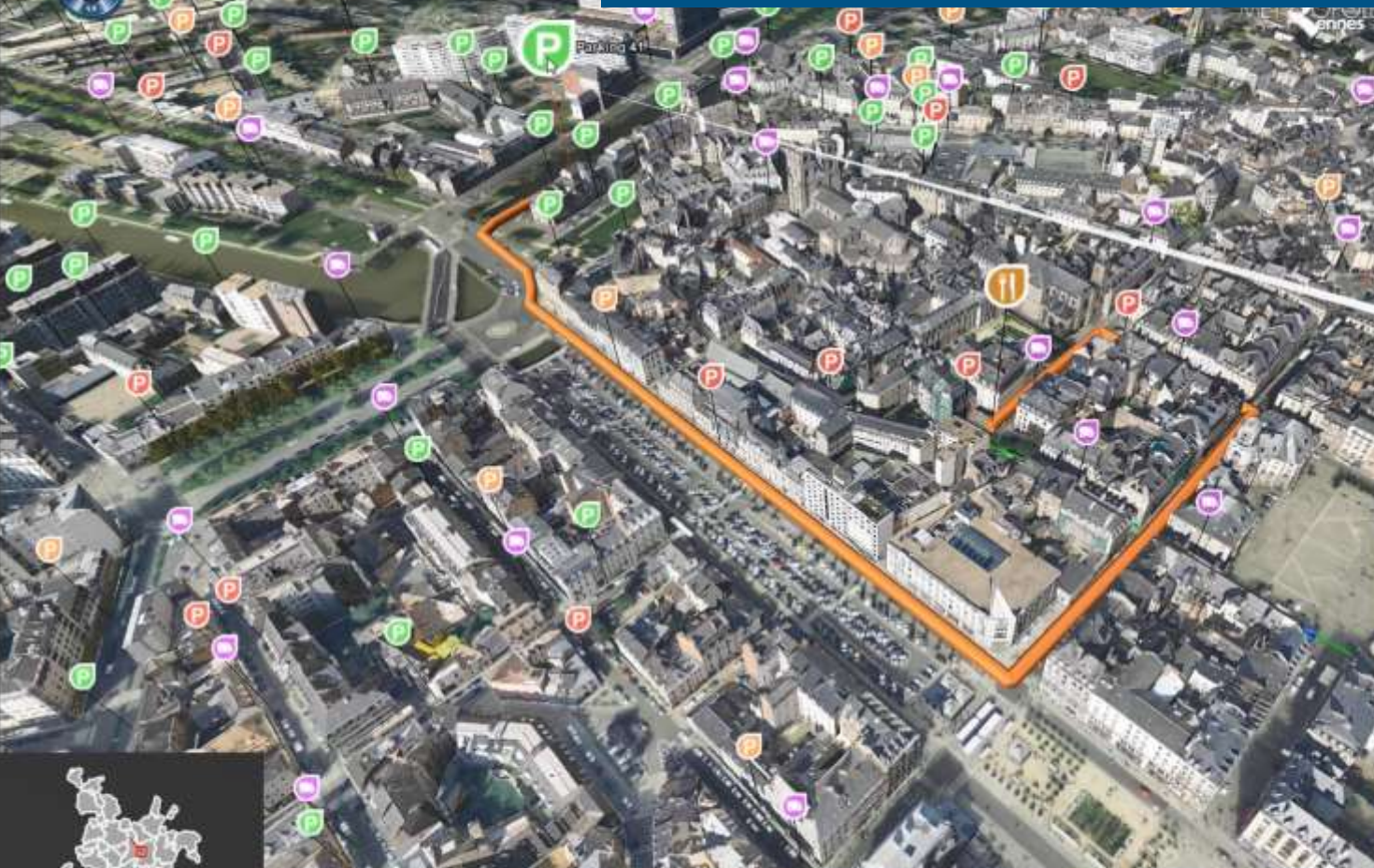


City of Rennes

430.000 inhabitants / 700 km²



Study of Smart Mobility services in Virtual test field



by 3DEXPERIENCE LAB

P PARKING METER N° : 41

Pricing : min [progress bar] max

Number of parking spaces : 15

Available parking spaces **3**

Rennes Métropole - City of Rennes Service SIG/DI Database
City of Rennes



Study of Smart Mobility services in Virtual test field



3DEXPERIENCE



City in the Age of Experience



City is aggregation of Systems (System of Systems)



The 3DEXPERIENCE Platform



