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Smart City in Tokyo Region

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Photo : Renaissance Urbaine, 2015

Smart City Initiatives in Tokyo Region
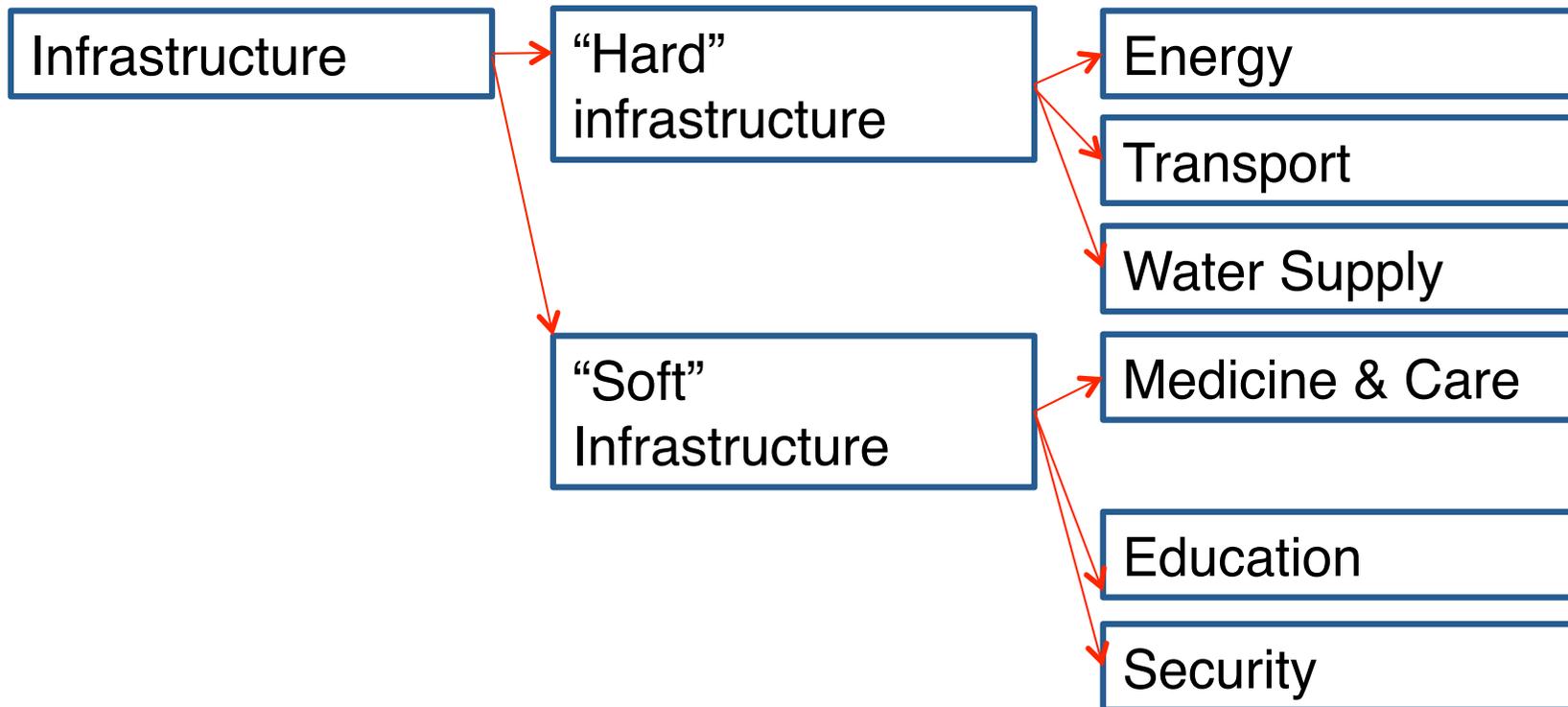
Smart City in Tokyo?
It is about ICT-assisted city management for improved sustainability and livability

Why Tokyo can be a model smart city?:
1. Already efficient **urban management system** (Ex. Public transport system)
2. Highly innovative **culture of technology**
3. Increased demand for **sustainable energy** (Ex. Great Tohoku Earthquake and Nuclear disaster in 2011)
4. Rapidly **aging population**
5. Constant needs for **disaster prevention**

Smart City = ICT-assisted efficient urban management

Infrastructure → "Hard" infrastructure → Energy, Transport, Water Supply

"Soft" Infrastructure → Medicine & Care, Education, Security

Source : Japan Research Institute

Innovation for Everyone 2020

The Government's
Task Force on Innovation
towards
Tokyo Olympics &
Paralympics 2020

9 Themes of Innovation

Source: Cabinet Office, the Government of Japan

Urban Transport System for Everyone

Mobility Innovation 2020

Advanced Rapid Transit (ART)

PTPS高度化（公共車両優先）

オリンピック・パラリンピック関係者及び
客の安全・円滑な交通の確保、継続
な次世代公共道路交通システムの
用・その他地域への普及を目的に
700MHz無線通信等を活用した新た
公共車両優先システムの検討を進めて
います。

①信号制御で公共車両を優先走行
路側通信機を通じてARTの走行を感知
し、優先信号制御で連続する信号をス
ムーズに通過させます。

Prioritized
public
transport by
smart traffic
signals

Car-to-car and road-to-
car information system to
increase efficiency and
safety
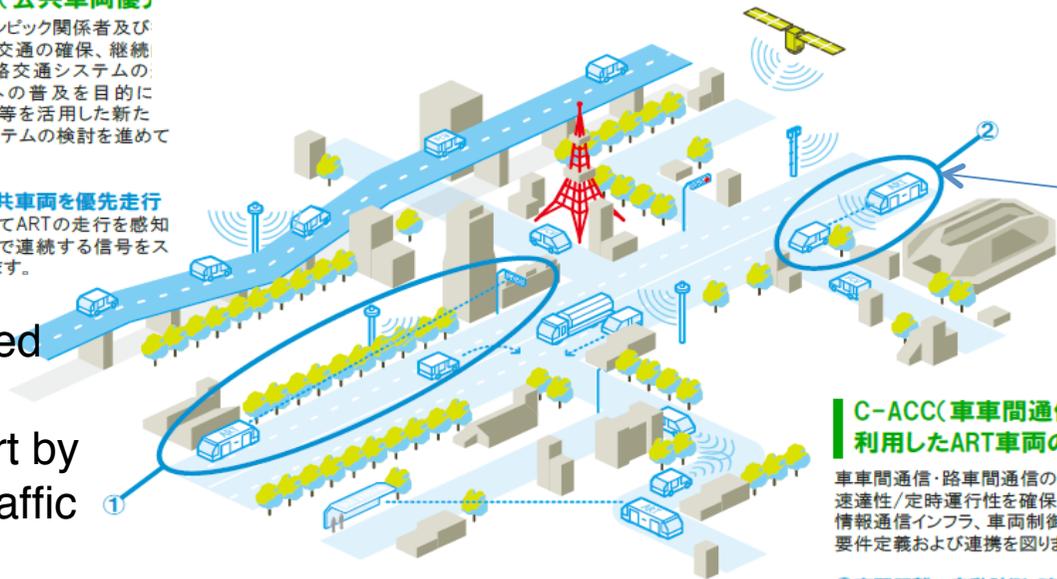
**C-ACC（車車間通信）・路車間通信を
利用したART車両の制御**

車車間通信・路車間通信の利用によって、安全性、
速達性／定時運行性を確保します。また、道路インフラ、
情報通信インフラ、車両制御間のハード的、ソフト的な
要件定義および連携を図ります。
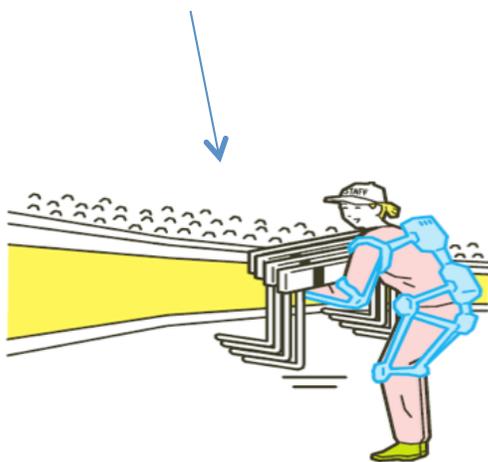
②車間距離の自動計測・確保
周囲を走行する車両と通信を行い、安全な車間距離を
自動的に維持します。

Smart City Initiatives in Tokyo Region

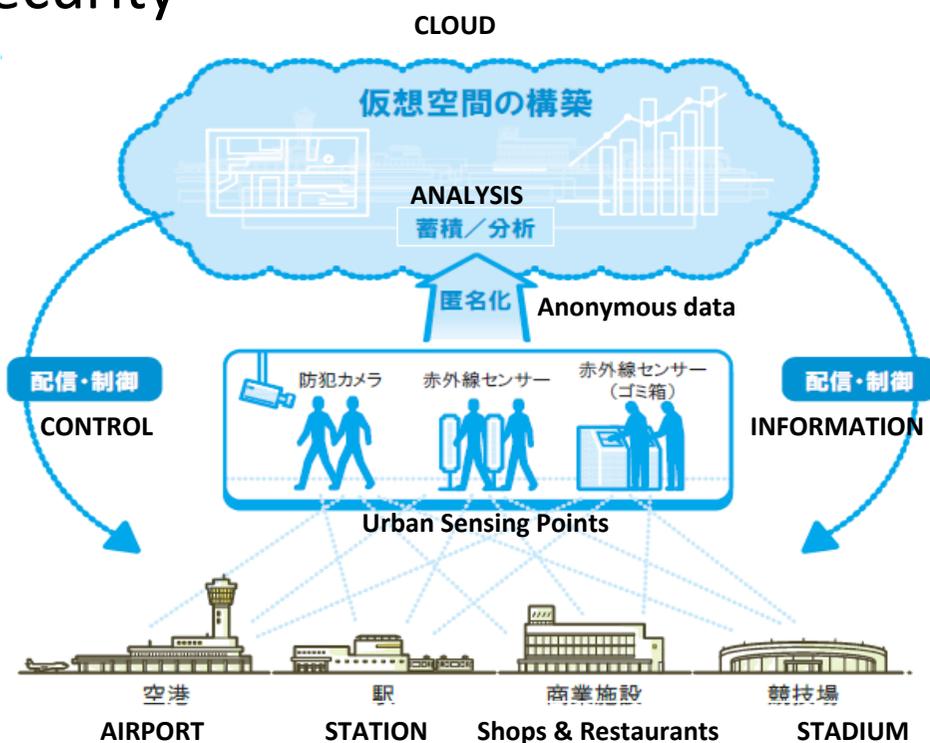## Promotion of Social Participation through Assistive Technology

Assistive robotic suit

ICT-assisted navigation for elderly and people with disabilities

Big Data for Improved Efficiency and Security

Source: Cabinet Office, the Government of Japan

CLOUD

仮想空間の構築

ANALYSIS
蓄積／分析

匿名化 **Anonymous data**

配信・制御
CONTROL

防犯カメラ　赤外線センサー　赤外線センサー
（ゴミ箱）

配信・制御
INFORMATION

Urban Sensing Points

空港
AIRPORT

駅
STATION

商業施設
Shops & Restaurants

競技場
STADIUM

Big data & Sensing Innovation 2020
【移動最適化システム】ビッグデータでヒトの流れをスムーズにし、安全で快適なおもてなしを

Innovation for Everyone 2020

Cercle Grand Paris de l'Investissement Durable ~
The Grand Paris Alliance ~

Source : Mitsui Real Estate, http://www.mitsuifudosan.co.jp/english/corporate/news/2010/0622/index.html

Nihonbashi area development

Urban Developments in Tokyo City Centers: the example of Mitsui Fudosan (Mitsui Real Estate)

- Earthquake-proof building structure
- Earthquake-proof elevators
- Destruction analysis
- Up to 72-hour emergency power generation
- District energy management system
- Smart energy monitoring system

Smart City Initiatives in Tokyo Region

Toranomon Hills

Roppongi Hills

Source: Mori Building, https://www.mori.co.jp/company/press/release/2015/06/20150617150020002995.html

Urban Developments in Tokyo City Centers: the example of Mori Building

Toranomon Hills development
- Large-scale heat and power cogeneration system
- Earthquake-proof building structure
- Perpetual power supply through dual (oil + gas) emergency generators
- Tenant-by-tenant building energy management system
- Censor-adjusted LED lightings

Roppongi Hills greening
- Urban heat reduction through improved green coverage

Source : Pana Home, http://fujisawasst.com/JP/photo/

Smart City Case #1
Fujisawa Smart City, Kanagawa Prefecture (2014-)

- 1000 housing units on 19 ha
- All residences are run by solar power, fuel cell, and storage battery linked to HEMS
- Zero carbon emission
- Shared electric bicycles
- Energy, security and healthcare management service

Source: Kashiwa-no-ha Smart City, http://www.kashiwanoha-smartcity.com/concept/environment.html

Smart City Case #2
Kashiwa-no-ha Smart City, Chiba Prefecture (2014-2030)

- 3 million m2
- 26,000 residents, 15,000 workers
- Area energy management
- Smart-grid power supply
- 72 hour emergency energy supply
- Home energy management
- 60% Co2 reduction by 2030
- Shared electric vehicles and bicycles

Thank you!

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www.cerclegrandparis.org