

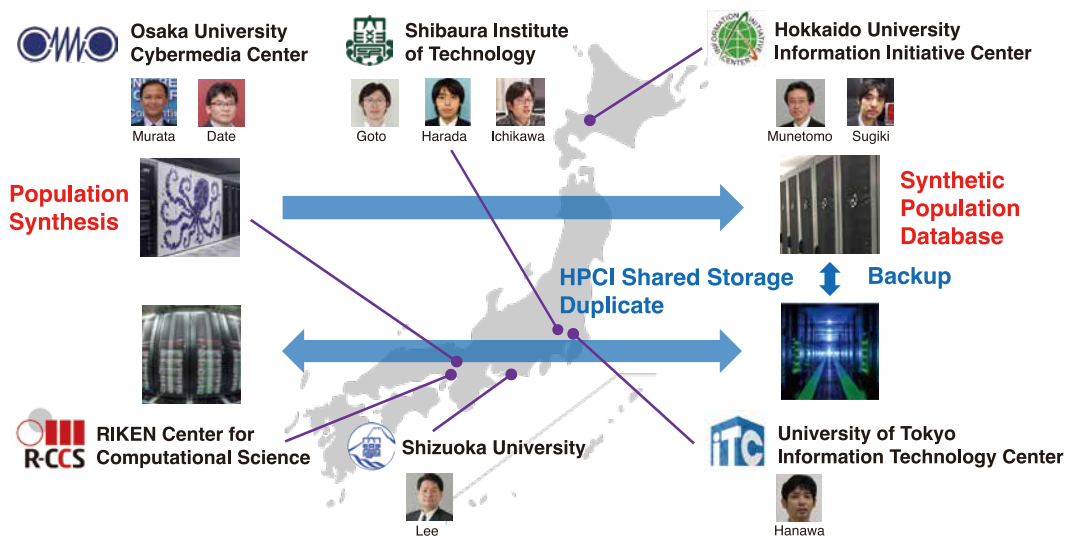
## Synthetic Population for Real-Scale Social Simulations

HPCI  
High Performance  
Computing Infrastructure

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### HPCI-JHPCN Synthetic Population Project 2019-2024



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#### Real-Scale Society

Synthesize Japanese populations using Census for 2000, 2005, 2010, and 2015. Working on 2020 now.

#### Platform for Real-Scale Social Simulations for Real-Society

Conduct simulations using Synthetic Populations and Data by researchers. Platform is now prepared by JST Mirai Program Grant Number JPMJMI23B1.

#### Real Statistics e-Stat



Minimize

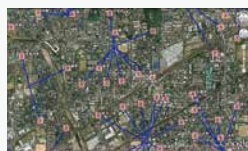
$$f(A) = \sum_i \sum_j^G |c_{ij}(A) - r_{ij}(A)|$$

#### Statistics on Synthesized Population



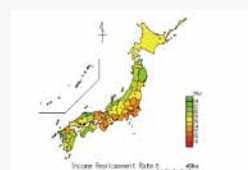
Supported by JSPS Kakenhi Grant Numbers 20H01500 & 20K10362.

**A** Voting Simulation in Takatsuki, Osaka with 350,000 population  
Age, Sex, Income, Working Status  
X Interest to election by age



Konishi, Murata (2010), Murata, Hamaguchi (2017)

**B** Pension Simulation in Japan with 120 million population  
Age, Sex, Income  
X Population Transition, Wage Transition, Working History



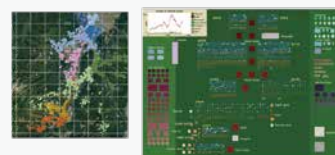
Du, Murata (2016)

**C** Labor Market Simulation in Iwate Prefecture with 100,000 population  
Age, Sex, Income, Working Status  
X Working Skill



Abe, Goto (2020)

**D** COVID-19 Infection Simulation in Myoko, Niigata with 30,000 pop.  
Age, Industries  
X Infection Rate by Age



Model by Population Distribution  
Cabinet Secretariat COVID-19 Simulation Project  
Kurahashi (2020)

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