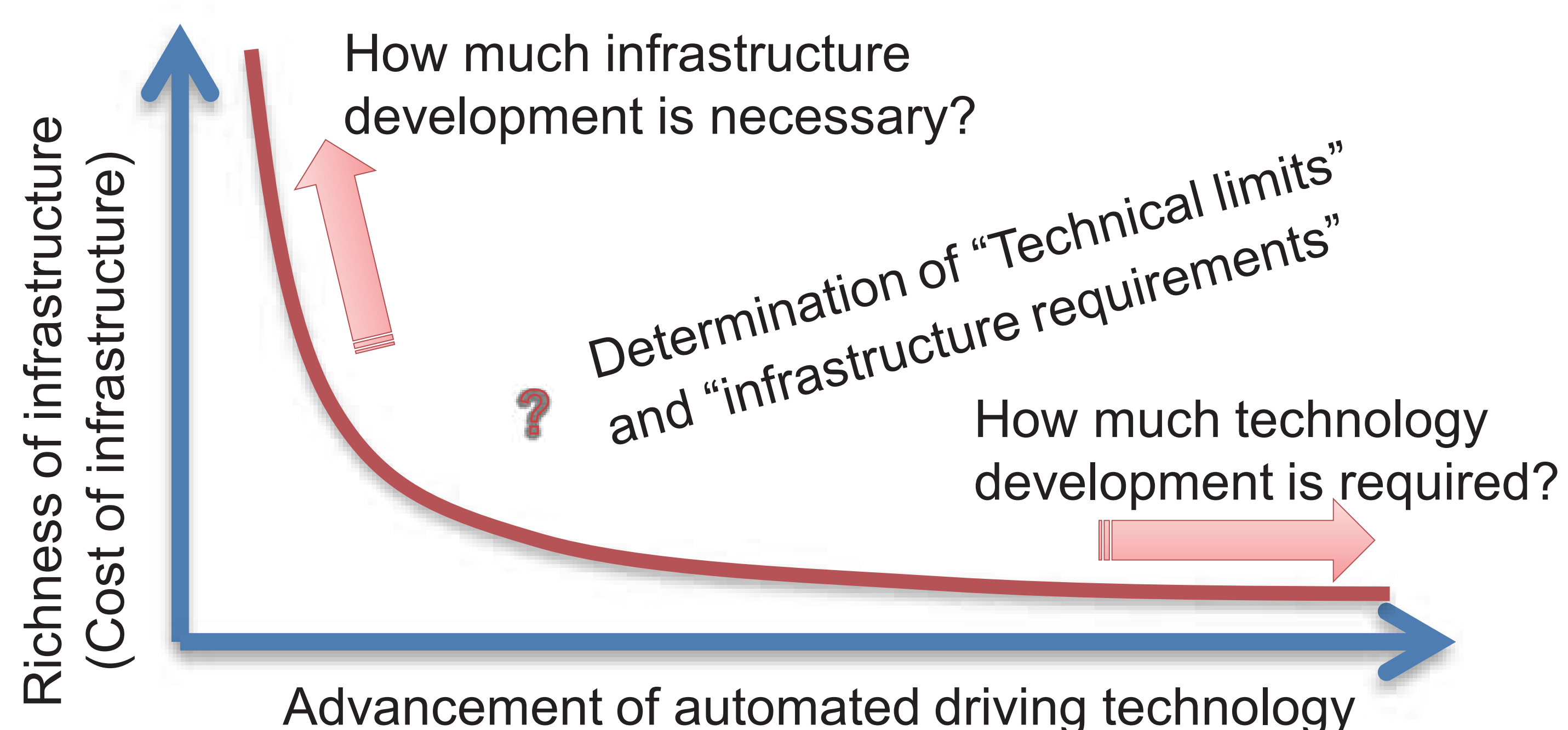


Research on recognition technologies necessary for automated driving (levels 3 and 4)

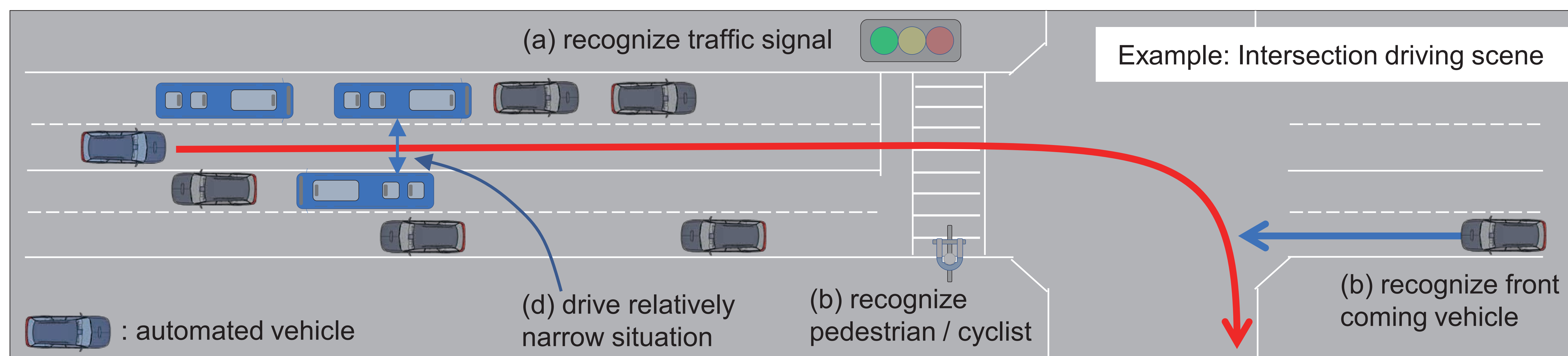
Objective

- Level 4 equivalent automated driving at urban area
 - It is necessary to have advanced perception and decision making system by onboard AI, as well as infrastructure such as road facilities and communication facilities to support it
- State-of-the-art autonomous vehicle technology
 - Competition area in the industry
 - Knowledge of academia is essential
- Determination of technical and infrastructure requirements



Project Summary

Determine installation and maintenance requirements for infrastructure-supported sensors during automated driving



- (a) Development of **traffic signal recognition technology** and investigation of difficult conditions
 - Determine installation requirements for infrastructure-supported traffic signals
 - Verification of effects by using infrastructure-supported traffic lights
- (b) Development of **AI technology required to detect distant objects**
 - Recognition of traffic participants required when entering an intersection
- (c) Development of high precision **self-localization technology**
 - Development of low-cost GNSS/INS system using QZSS
 - Determine road marking maintenance requirements for stable map matching
- (d) Development of **behavior prediction technology** of traffic participants and path planning algorithm
 - Behavior prediction of low-speed objects using deep learning
 - Recognition of surrounding objects by extended object tracking
 - Development of safety path planning in relatively narrow road conditions
- (e) Investigation of problem in the situation where multiple autonomous vehicle exist
- (f) Demonstration experiment at Kanazawa-city and Tokyo waterfront area



Public road demonstration experiment at Tokyo waterfront area