

Kikubari: A Model for Provisioning Dynamic Context-Aware Services Based on the Intentions

Purpose of Research

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Context-aware service provisioning system for coordinating multiple users' intentions along with changing context

Focusing on the change of context: (1) over time, (2) changes of location
complex context by: (3) multiple users

Approach

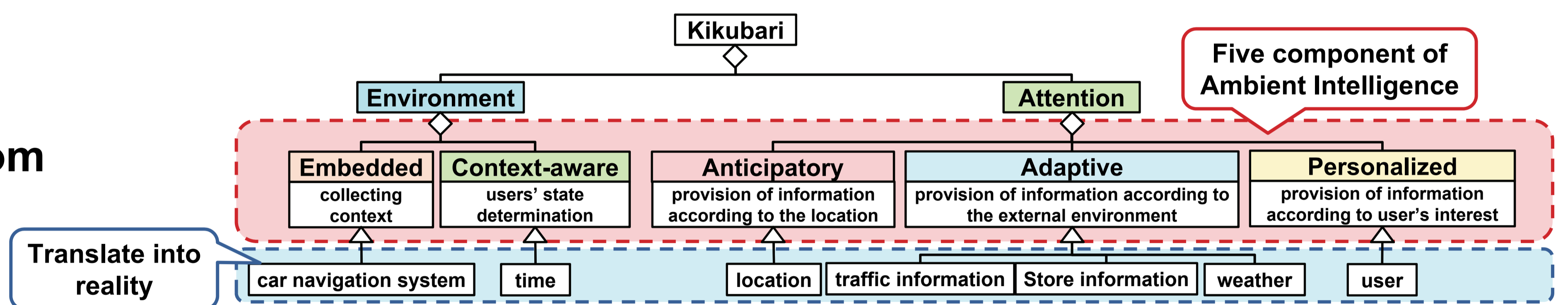
◆ Modeling "Kikubari" to elicit users' intentions

- (1) Measuring the distance between multiple users' intentions in the vector space model
- (2) Coordinating users' intentions to narrow down the distance between intentions by a goal-oriented analysis method i^*

Consensus Building between Intentions based on Kikubari

1. Kikubari Model

Structuring "Kikubari" with five properties extended from Ambient Intelligence (Aml) framework



2. Consensus Building between Intentions

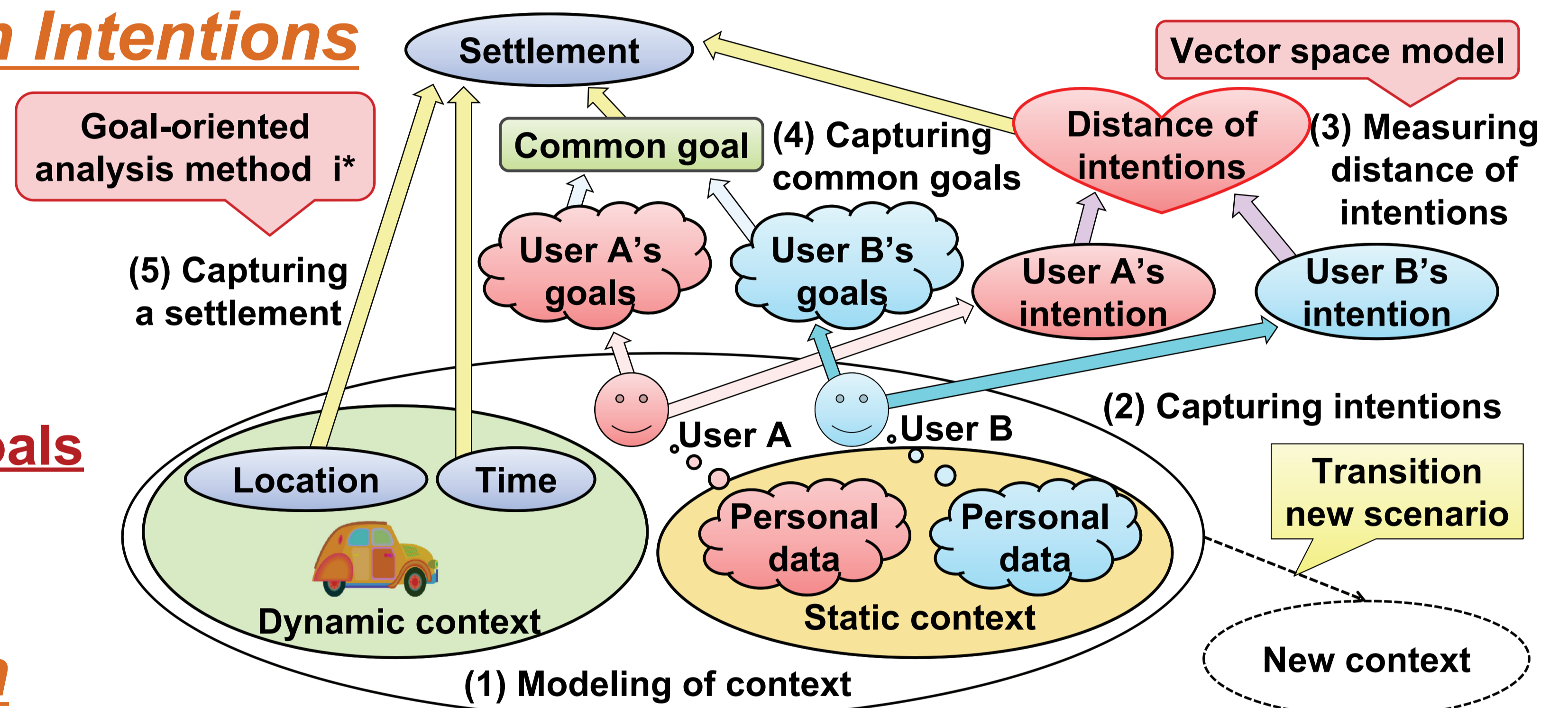
◆ Process of Consensus Building:

■ Capturing Common Intention

- (1) Modeling of context
- (2) Capturing intentions
- (3) Measuring distance of intentions

■ Consensus Building based on Goals

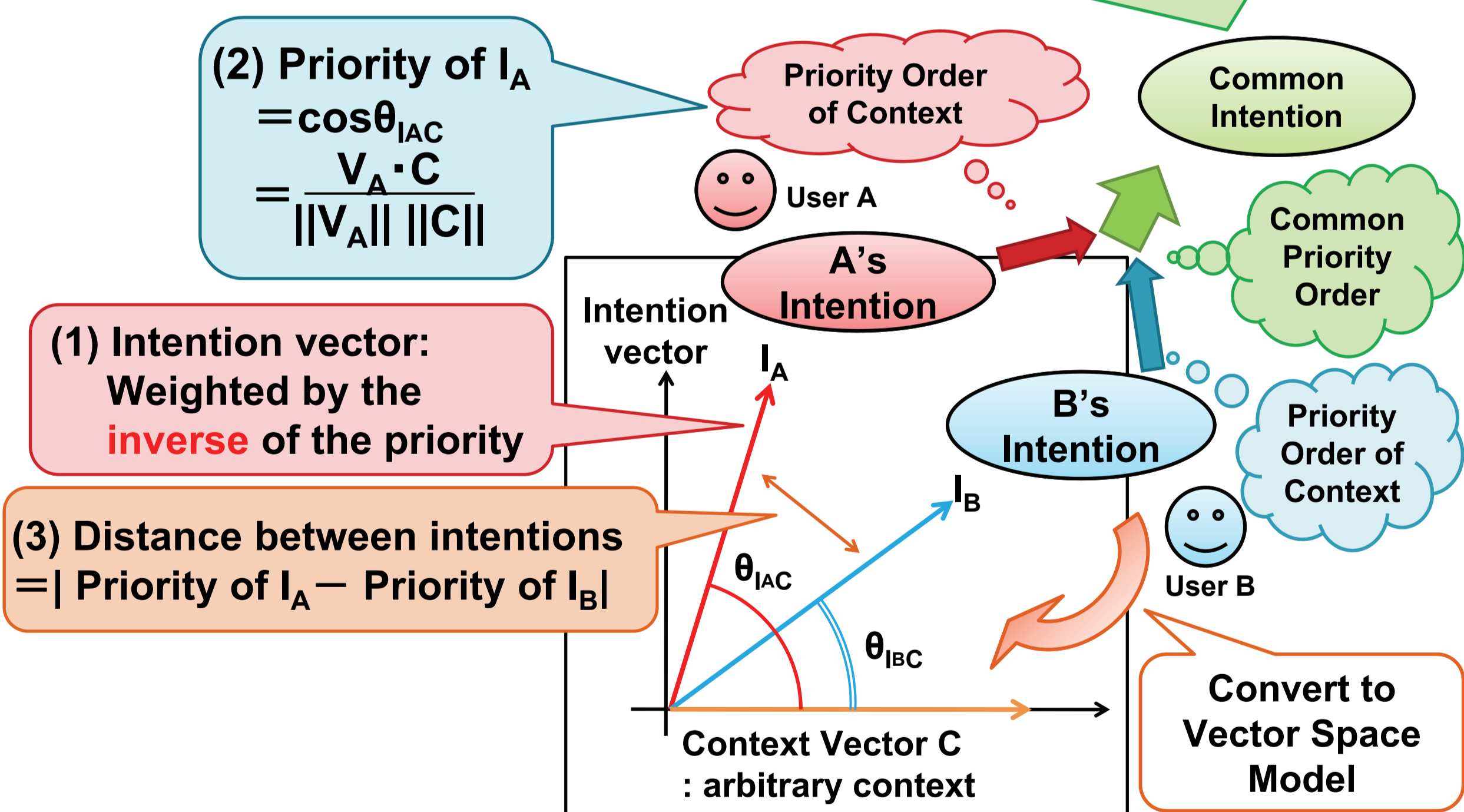
- (4) Capturing common goals
- (5) Capturing a settlement



3. Capturing Common Intention

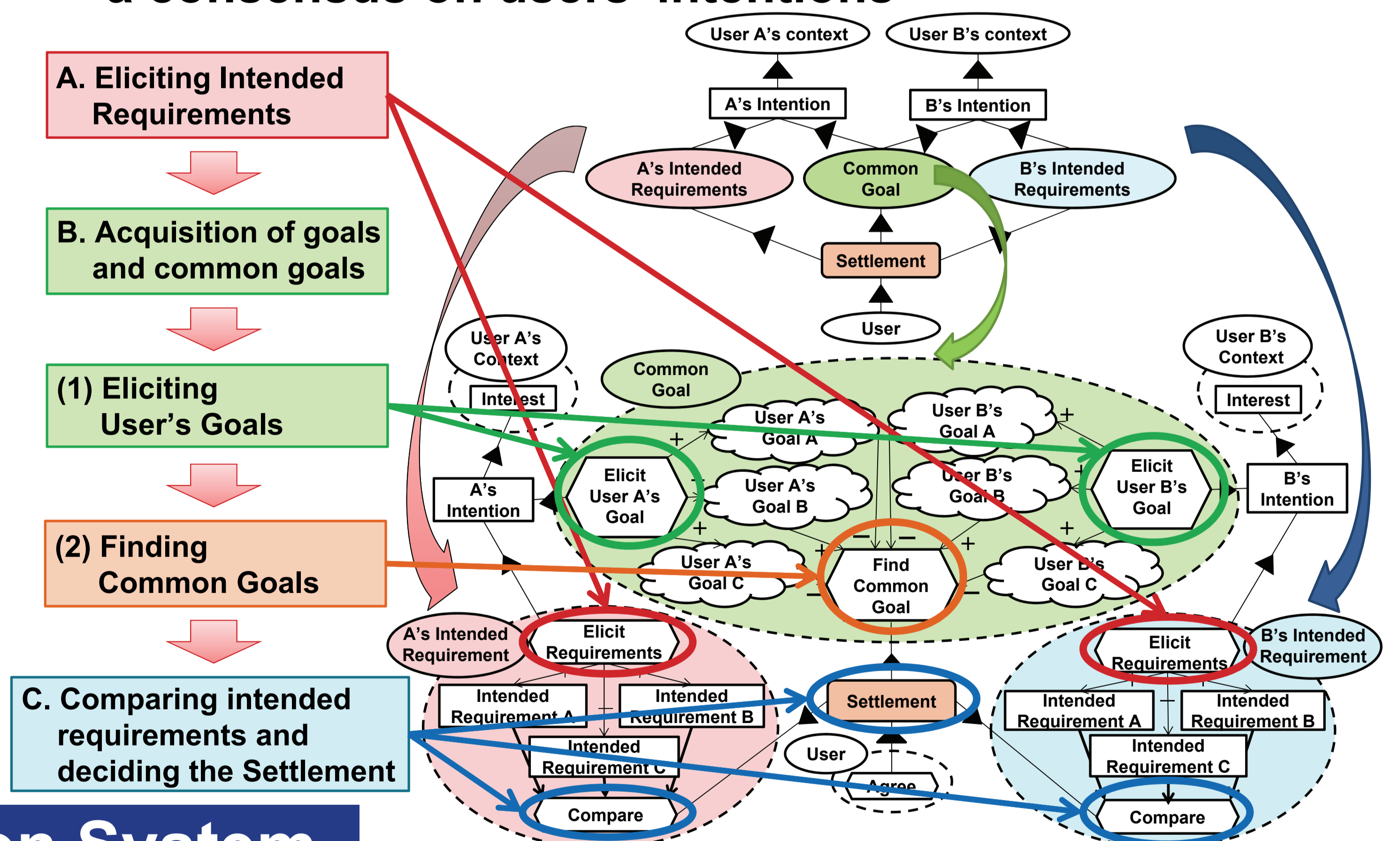
Focus on personal interest and elicit a common interest by using the vector space model

(4) Common prioritization:
Rank from a high priority and short distance of intention
⇒ the top of common priority is a common intention



4. Consensus Building based on Goals

Meeting the common goals helps to build a consensus on users' intentions



Application to Virtual Car Navigation System

5. Application of the Proposed Model

- ◆ Virtual car navigation system with the Google Maps
- ◆ Providing information along with movement of the car

Acquire store information along the agreed intention for each waypoint predicted

6. Evaluations

- ◆ Appropriate service providing in the changing context
- ◆ Use of inner product of the vector space model is effective for prioritization



Downtown Nagoya