

**Towards a common reference implementation  
platform in CVIS  
FOAM Framework**

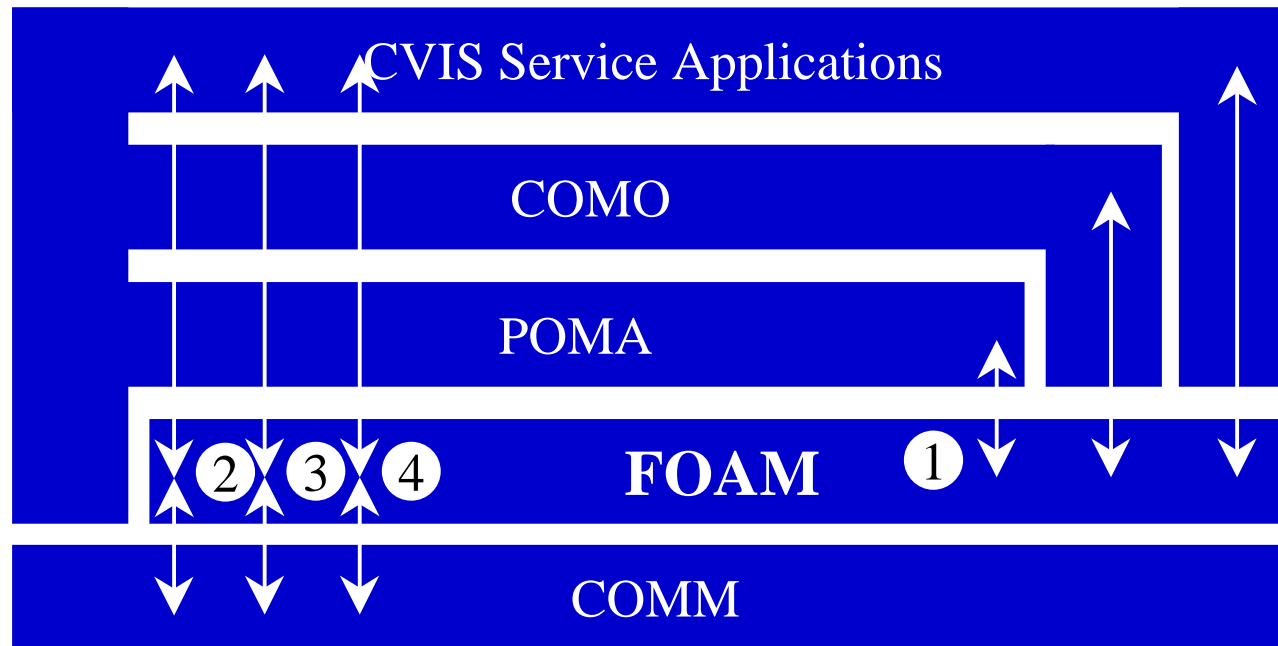
**Sevecom Workshop, Budapest,  
September 5, 2006**

**Paul van Koningsbruggen (Technolution)**

# FOAM Framework for Open Application management

- Position of FOAM within CVIS
- FOAM's four folded nature
- GST, natural ancestor of FOAM

# Service Model to describe position of FOAM in CVIS



- Service Deployment and Provisioning
- Secure Service Execution
- Setting-up Collaborations
- Service Payment

Four folded  
nature of FOAM

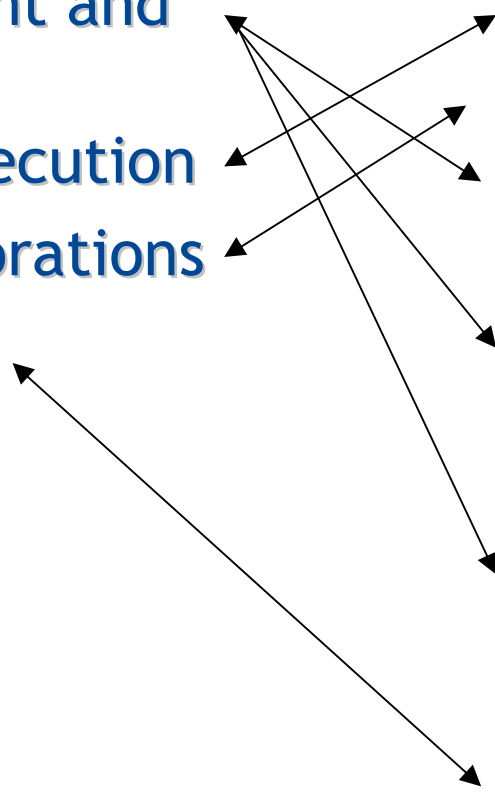
# Work Items of FOAM

## Position of FOAM within CVIS

- Service Deployment and Provisioning
- Secure Service Execution
- Setting-up Collaborations
- Service Payment

## Work Items of FOAM

- (A) Security
- (B) Communication
- (C) Remote manageability
- (D) Application run time environment and sensor access (roadside)
- (E) Application run time environment and sensor access (in-vehicle)
- (F) Billing and Payment

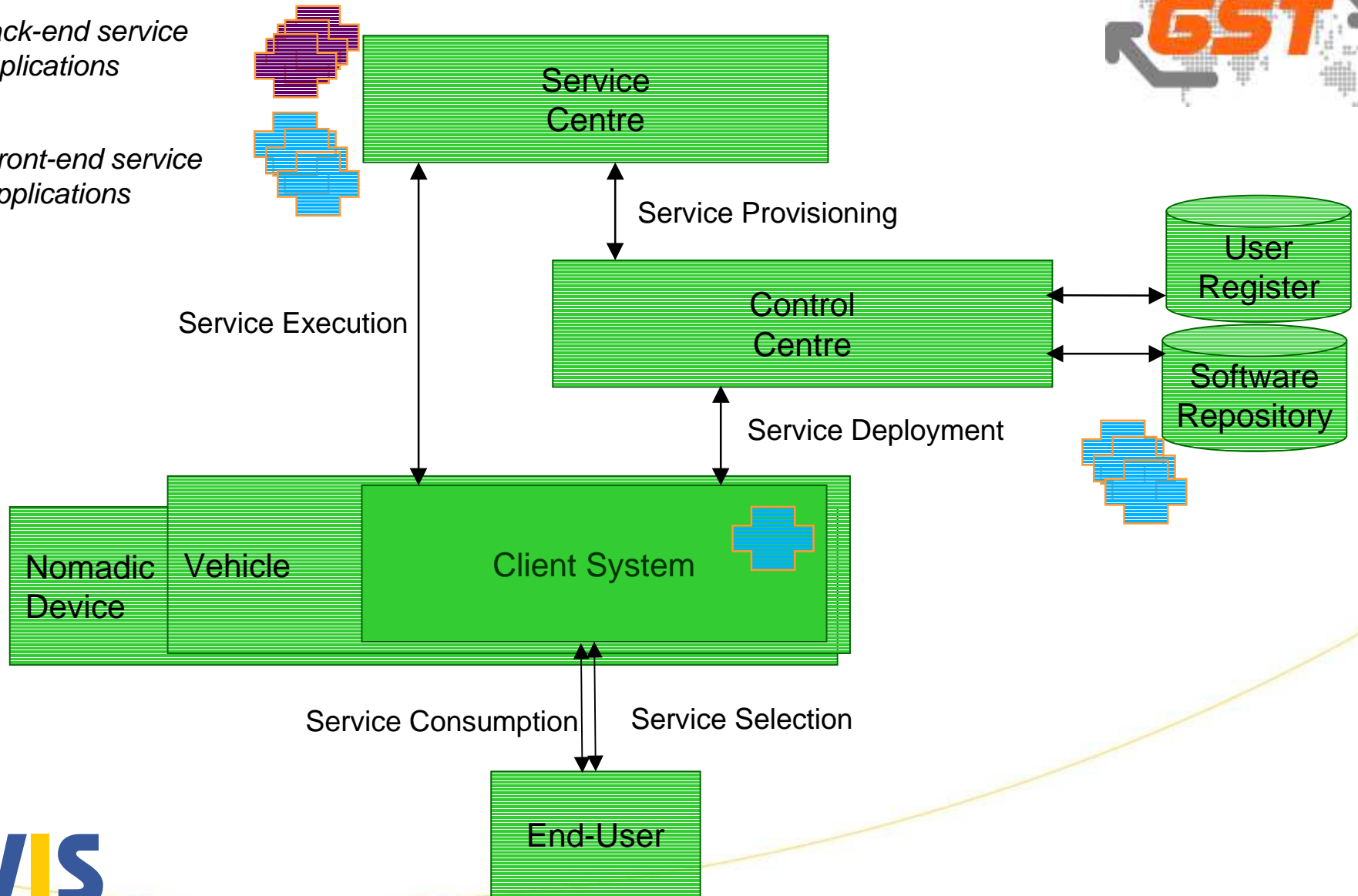


# Service Deployment and Provisioning within GST <sup>①</sup>

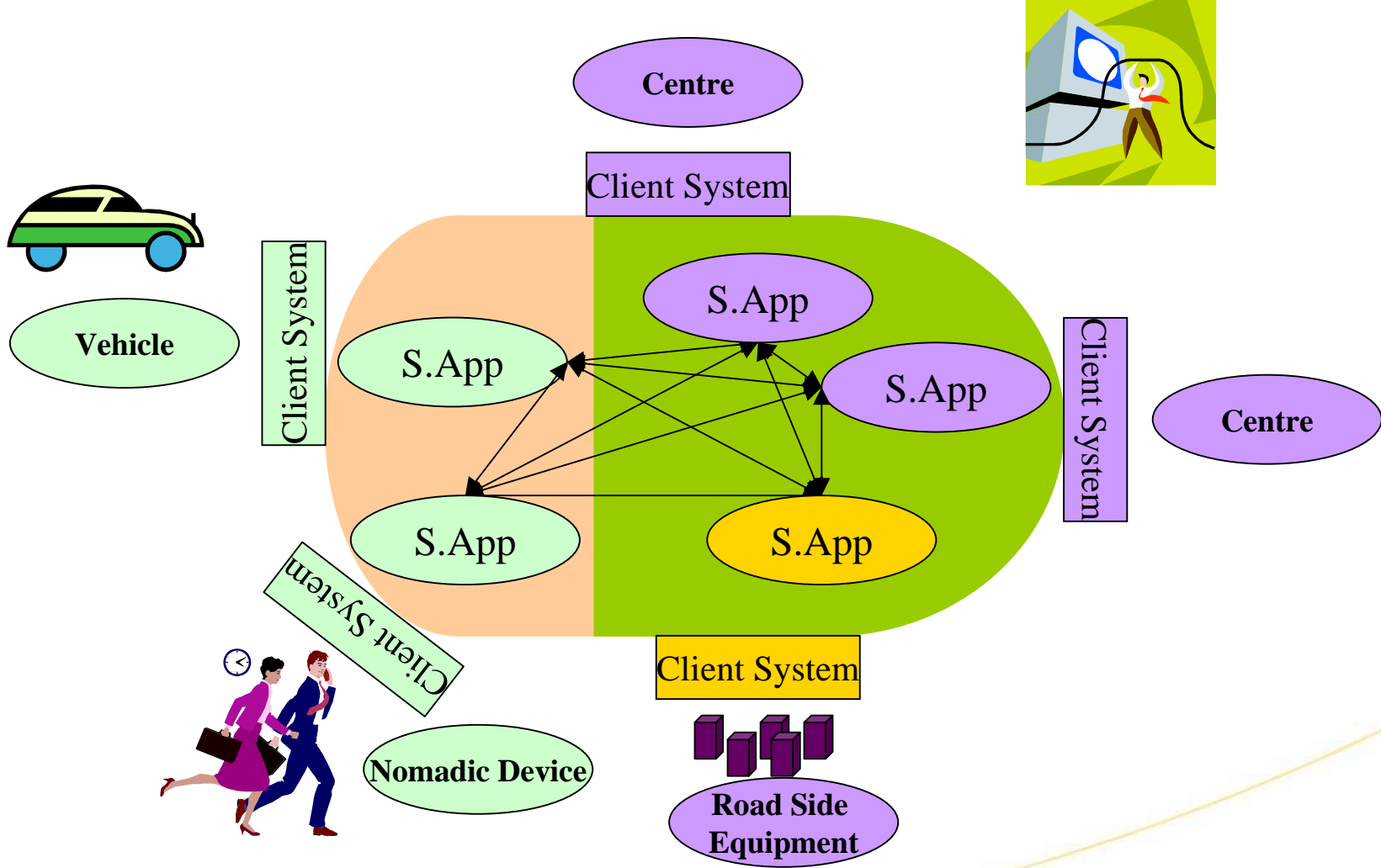


Back-end service applications

Front-end service applications



# FOAM enables a Cooperative Vehicle - Infrastructure System <sup>1</sup>





# Use Cases for Service Provisioning and Deployment <sup>①</sup>

- CV-UC-FOAM-0016 Application update in vehicle / mobile client
- CV-UC-FOAM-0017 Updating of application to the RSE and its components
- CV-UC-FOAM-0018 Configuration information on native FOAM System
- CV-UC-FOAM-0020 Access to Roadside System Services or Sensors
- CV-UC-FOAM-0021 HMI Access
- CV-UC-FOAM-0022 Access to vehicle sensors



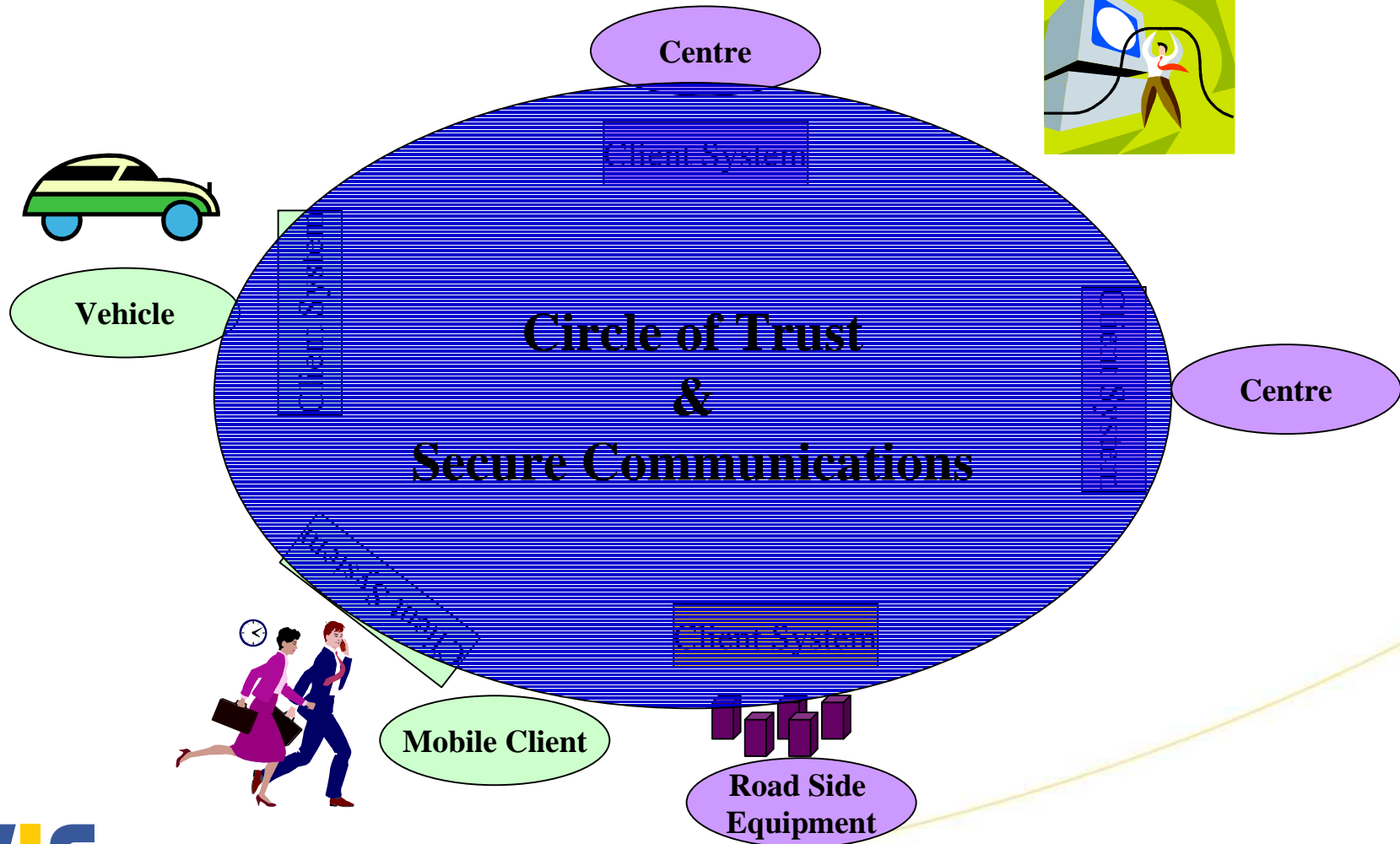
# Four folded nature of FOAM (guide)

Nature of FOAM:

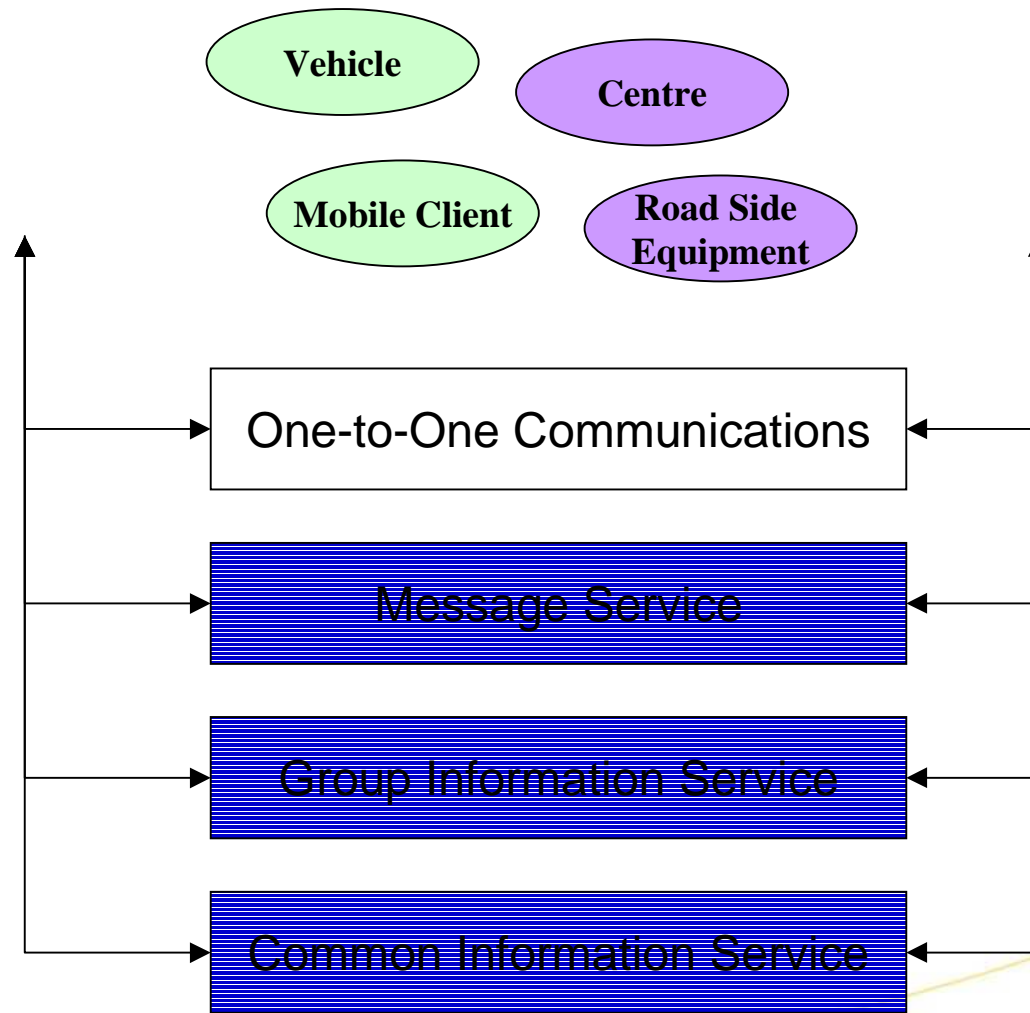
- Service Deployment and Provisioning
- **Secure Service Execution**
- Setting-up Collaborations
- Service Payment

# Secure Service Execution (a)

2



# Different Forms of Communication to safeguard Privacy (b) ②



# Use Cases for Secure Service Execution <sup>②</sup>

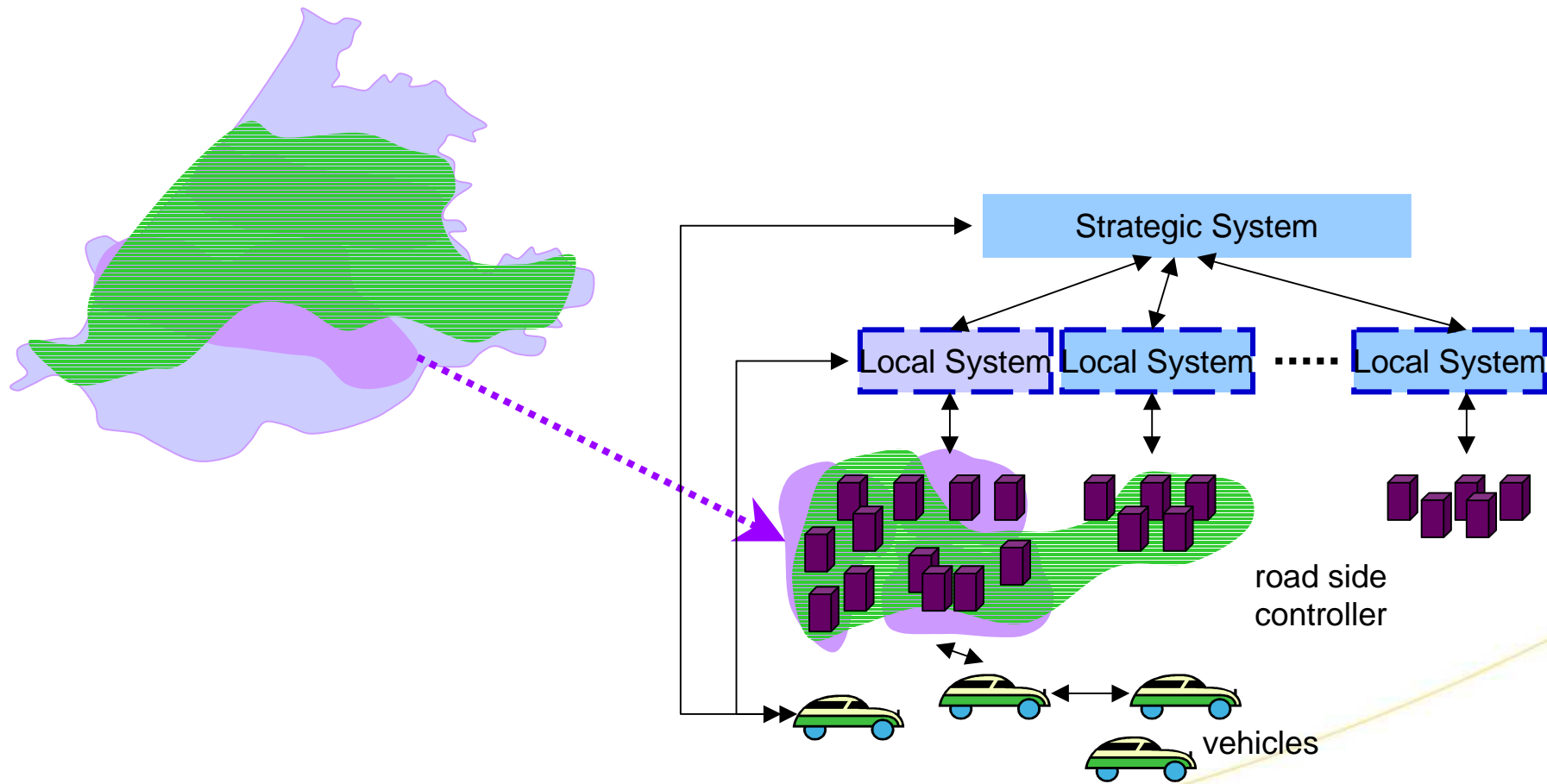
- CV-UC-FOAM-0001 Privacy and Liability aspects of data collection
- CV-UC-FOAM-0002 Public Key Infrastructure Deployment
- CV-UC-FOAM-0003 Trustworthy infrastructure
- CV-UC-FOAM-0004 Trustworthy information exchange between FOAM applications

# Four folded nature of FOAM (guide)

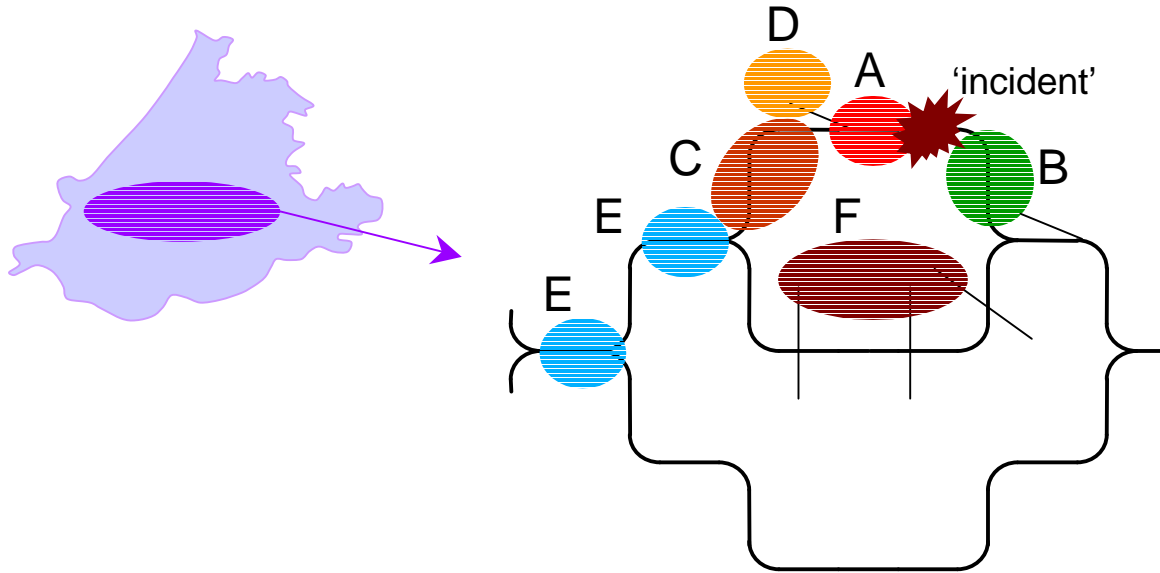
Nature of FOAM:

- Service Deployment and Provisioning
- Secure Service Execution
- **Setting-up Collaborations**
- Service Payment

# Setting up 'collaborations' along the road side (a) ③

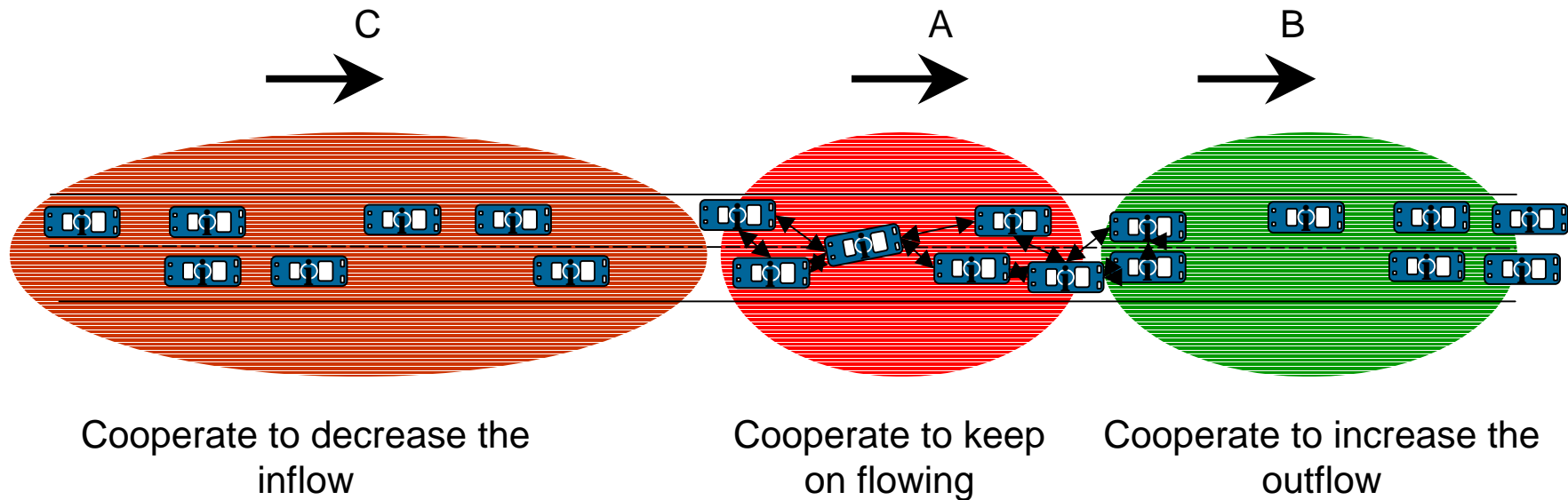


# Setting up 'collaborations' along the road side (b) ③



- A = 'We can help by keeping the vehicle flowing even when they have to merge'
- B = 'We can help by increasing the outflow of vehicles and not forming any blockage at the front side of the incident location'
- C = 'We can help by tempering the inflow of vehicles to the segment with traffic jam'
- D = 'We can help by tempering the inflow of vehicles to the segment with traffic jam'
- E = 'We can help by diverting (a part of) the vehicles to an alternative route'
- F = 'We can help by bringing the vehicles to the inter-urban network via alternative entrance lanes'

# Setting up 'collaborations' along the road side ③





# Use Cases for setting up Collaborations <sup>③</sup>

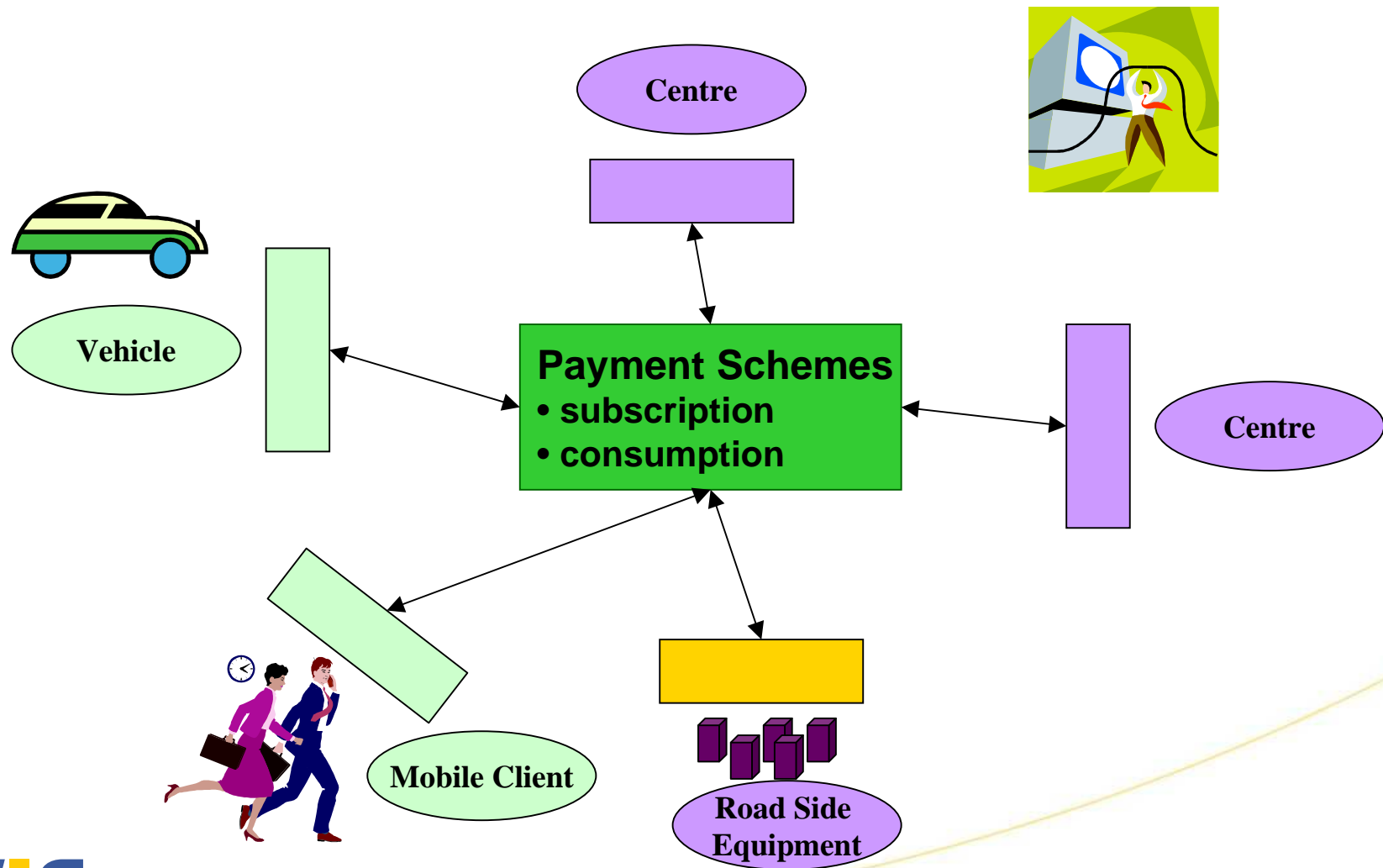
- CV-UC-FOAM-0014 Formation of spontaneous collaborating groups
- CV-UC-FOAM-0019 Local Road Side Application Operation

# Four folded nature of FOAM (guide)

Nature of FOAM:

- Service Deployment and Provisioning
- Secure Service Execution
- Setting-up Collaborations
- Service Payment

# Service Payment <sup>④</sup>



# Use Case Service Payment <sup>④</sup>

- CV-UC-FOAM-0030 Service Payment

# Resume

## Nature of FOAM:

- Service Deployment and Provisioning
- Secure Service Execution
- Setting-up Collaborations
- Service Payment

**Thank you for your attention!**