

Campus Safety and Emergency Command Platform System in Tsinghua

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Contents

- 1 Background of Campus Safety**
- 2 Safe Campus Information System Design**
- 3 Platform for Campus Safety and Resilience**

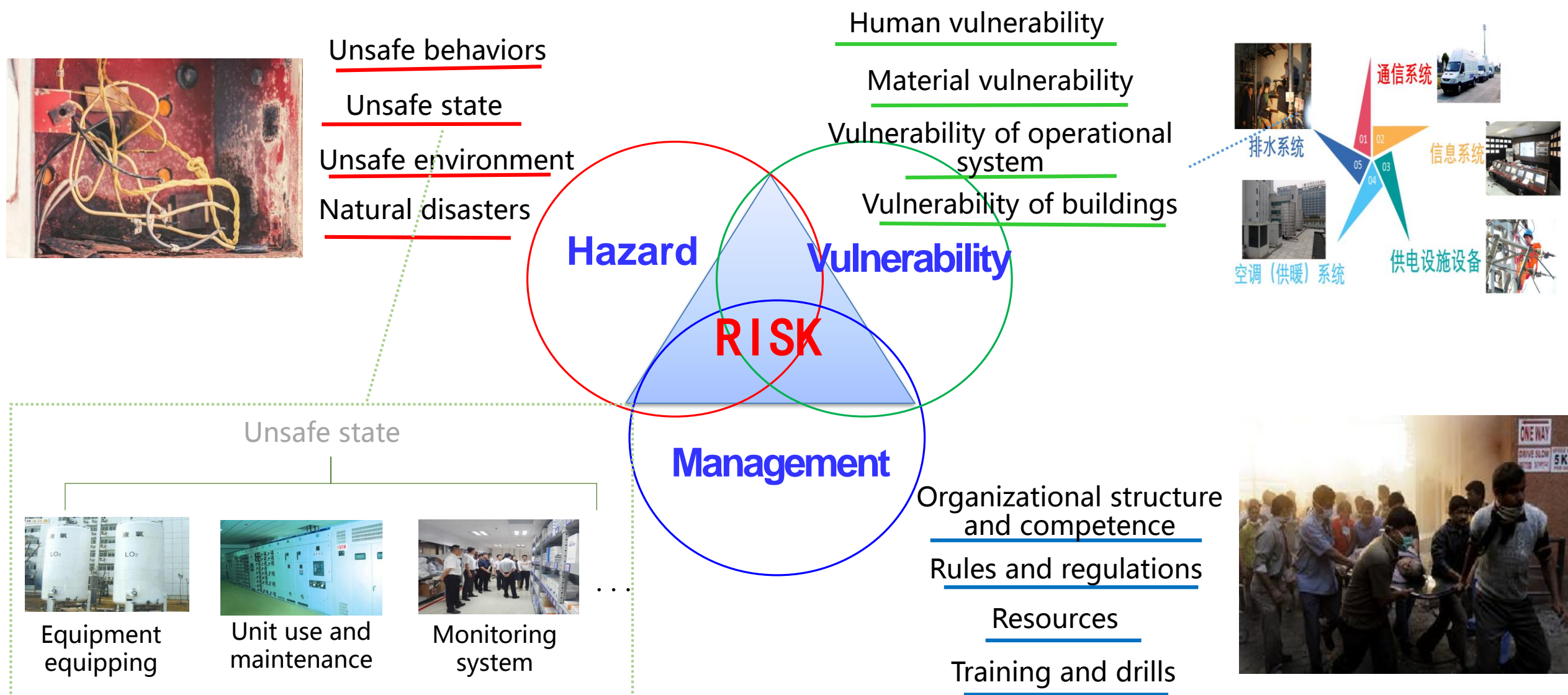
“Two Universities and One City” Demo Projects for National Education Comprehensive Reform Initiatives

Objectives:

- ❑ Systematically review campus risk and identify the key problems
- ❑ Establish monitoring and warning system using new technologies, e.g., video/camera, smart phone, face/license plate recognition system
- ❑ Connect to the neighborhood and to the city
- ❑ Establish campus safety protection system

Tsinghua University is one of three major pilots of national “two schools and one city” education comprehensive reform initiative. Some of campus safety incidents: **chemical laboratory fire, building fires due to charge of motorcycle battery, food poison, influenza, threat of exploration, traffic accident, flood, etc.**

Background Analysis of Campus Safety



Security Management Challenge of Tsinghua Campus

Security awareness is weak, and overall enhancement is difficult.

Network public opinion is fierce, and communication control is difficult.

Many association activities are difficult to track and manage

Dangerous chemicals are difficult to monitor and control

Miscellaneous experimental waste is difficult to handle safely

Many experimental equipments are difficult to monitor

There are many visitors and it is difficult to control the persons

We need to integrate information resources, establish a unified management platform, and strive to achieve:

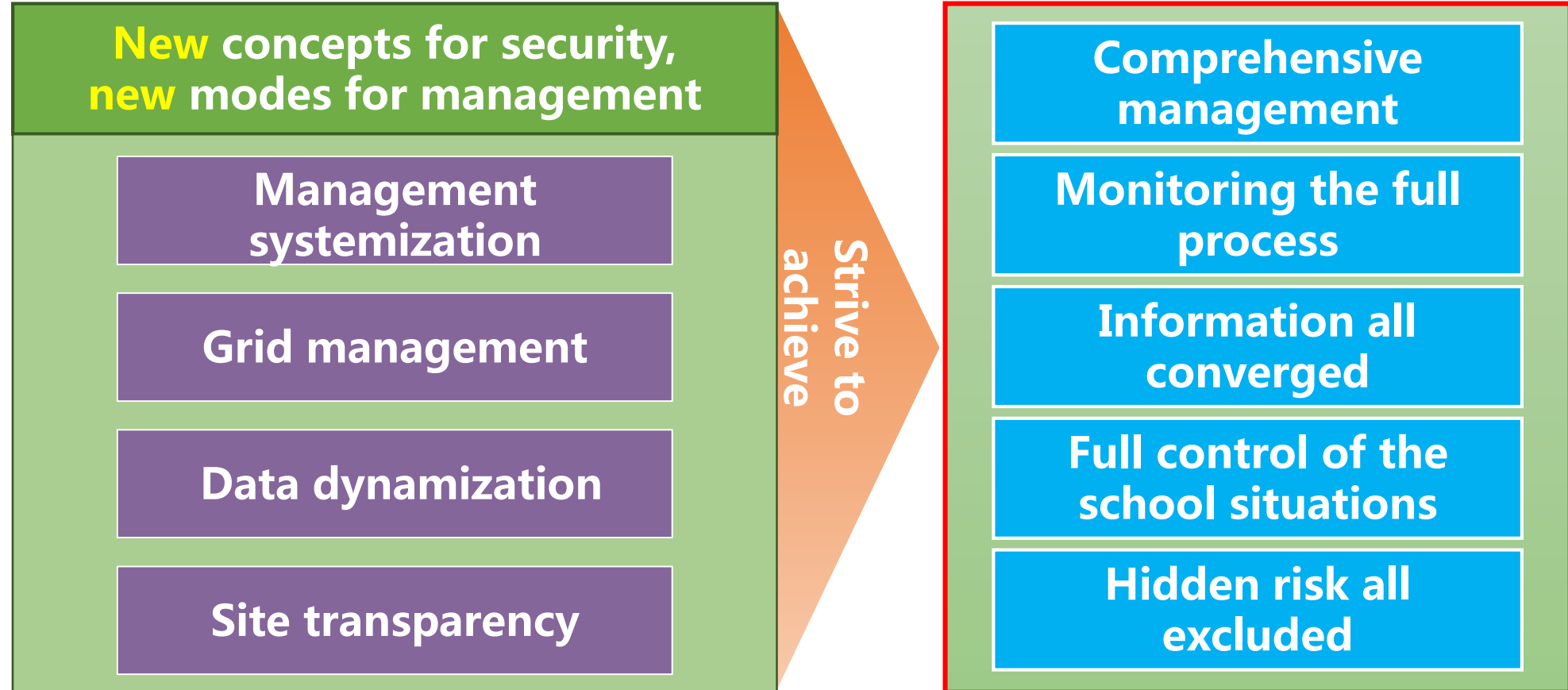
There are basic knowledge and plan for everything.

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Construction target of campus security platform

Take **the risk** as the main line,
take **the stability** as the goal.



Campus Safety Information Collection and Database

Campus safety information
collection and database

Collect safety related
information

Classrooms
Office building,
Laboratory building,
Dormitory building

Hazard
Resource
protection
Campus
facilities
Laboratory
equipment

Student
associations
Commonweal
organizations
Campus
enterprises



Campus Safety Information Collection and Database

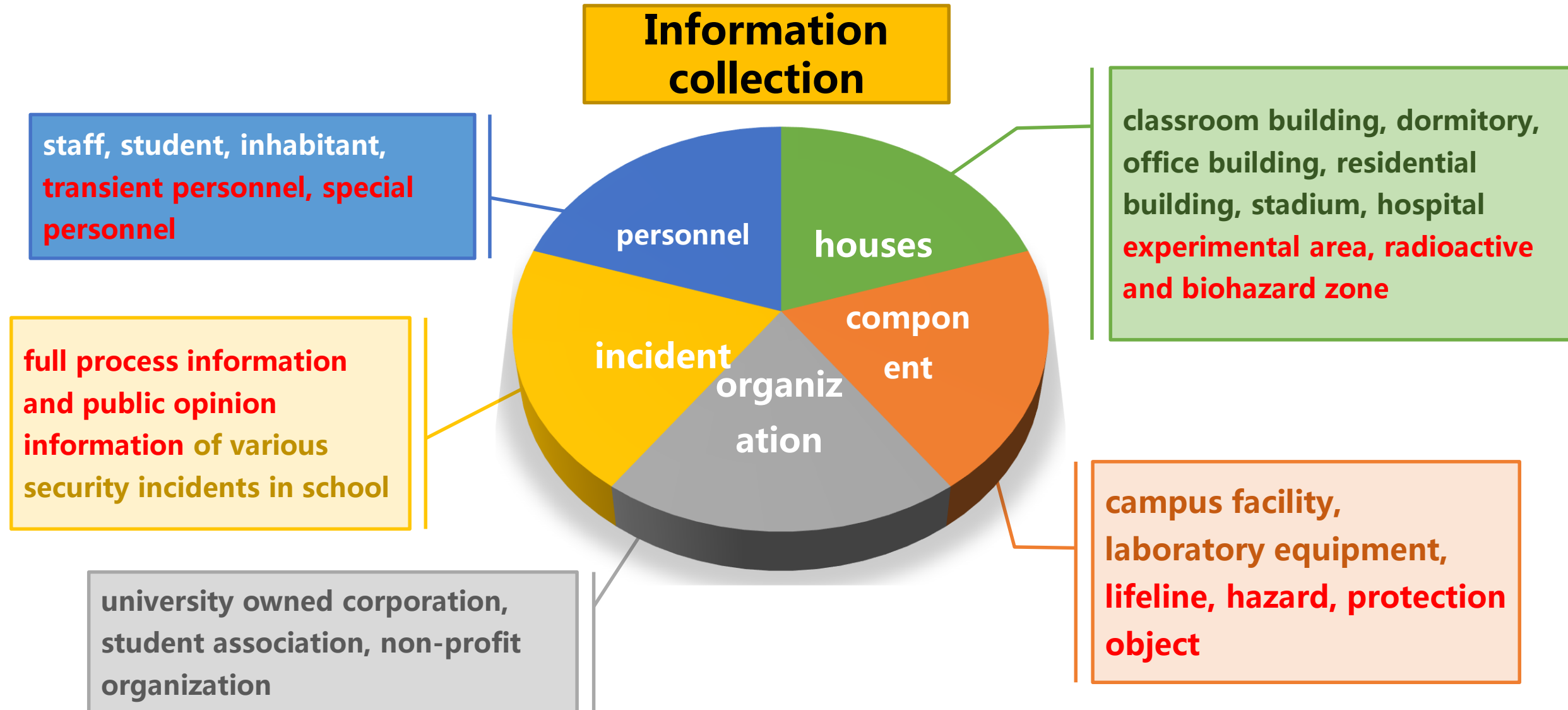


Campus Safety Information Collection and Database

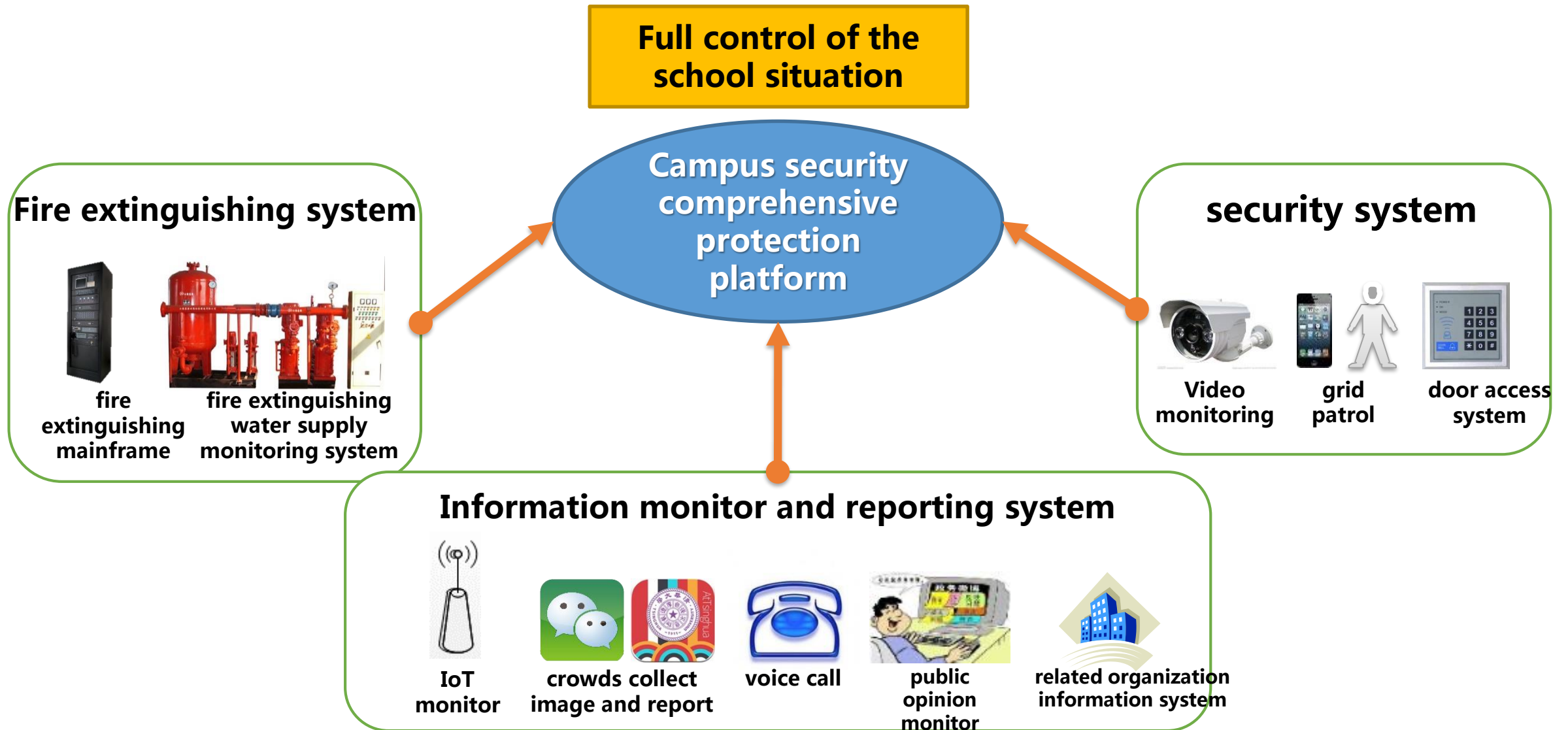
"Information islands"
joined together



Campus Safety Information Collection and Database



Campus Safety Information Collection and Database



System Usage



Intuitive understanding of campus operation
Quickly respond campus emergency decision



Enhanced public security awareness
Easy access to security information



Public safety knowledge training
Conveniently report security information



routine patrol



monitoring warning



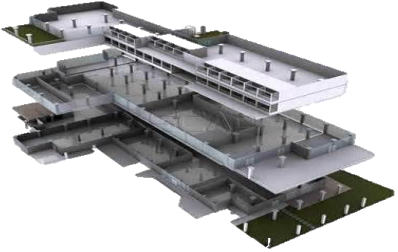
emergency response coordination



resource management

System Framework

Campus BIM、GIS modeling



building
information
modelling



function
information
modelling



geographic
information
modelling

risk identification and analysis

identification of campus
security risk incident

complete risk index system
construction

Dynamic risk information collection



Identification of risk assessment index
Classification of monitoring elements
Sensors installation and deployment
Information collection and access



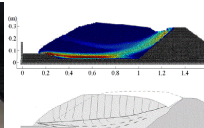
hazard
factor
detection



human
behaviour
monitor



logistic
equipment
monitor



environment
elements
monitor

multi-source information access technique

classification of
monitoring information
multi-source heterogeneous
information integration and
access

Campus risk prevention, control and emergency coordination platform



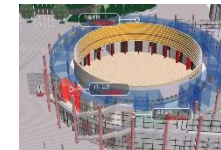
campus security platform



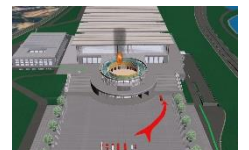
front platform



dynamic
risk
monitoring



situation of
incident
analyzed



emergency
coordination
scheme

information integration and analysis technique

combination of IoT and GIS/BI

cross impact chain analysis

Real-time risk assessment and
visualization

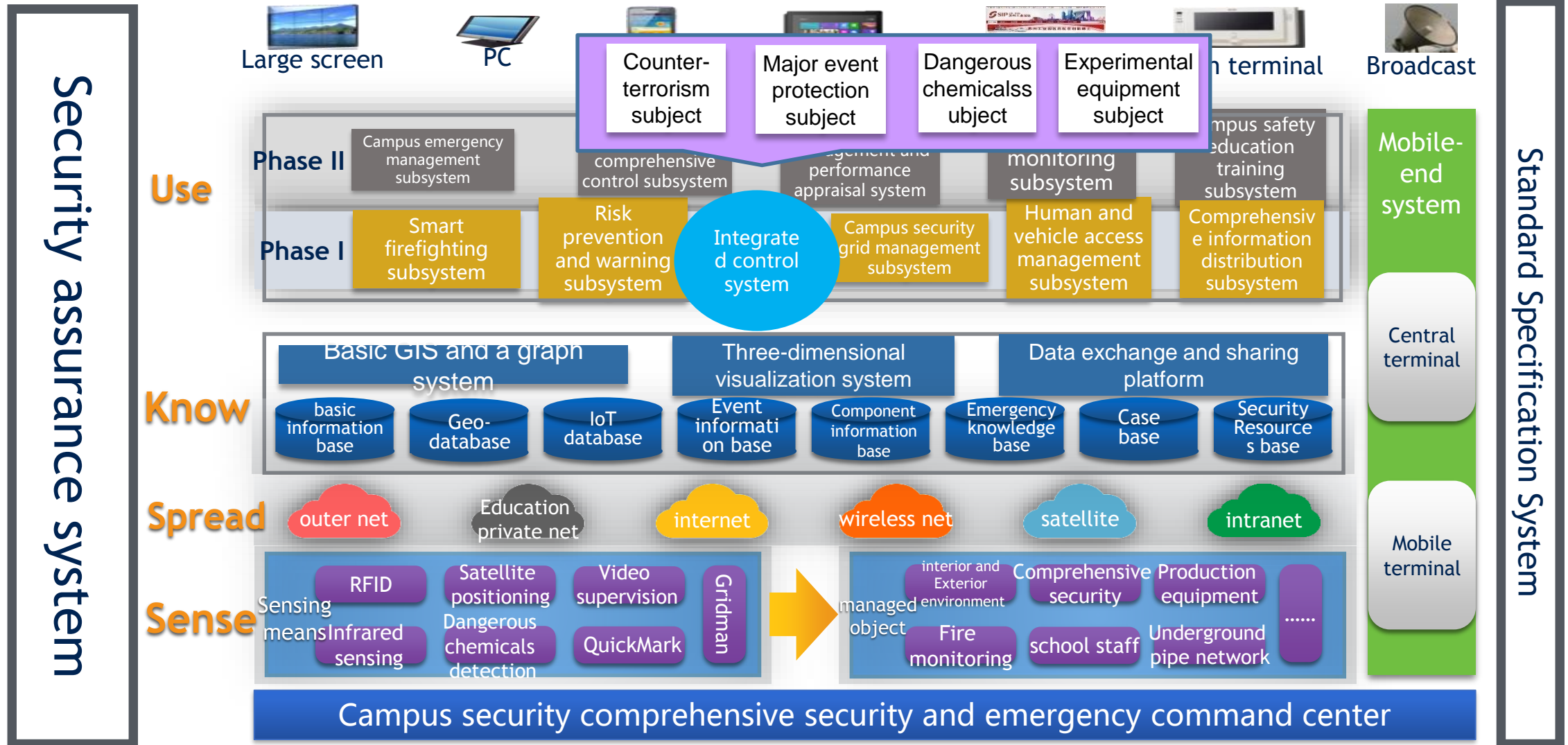
emergency coordination

situation comprehend

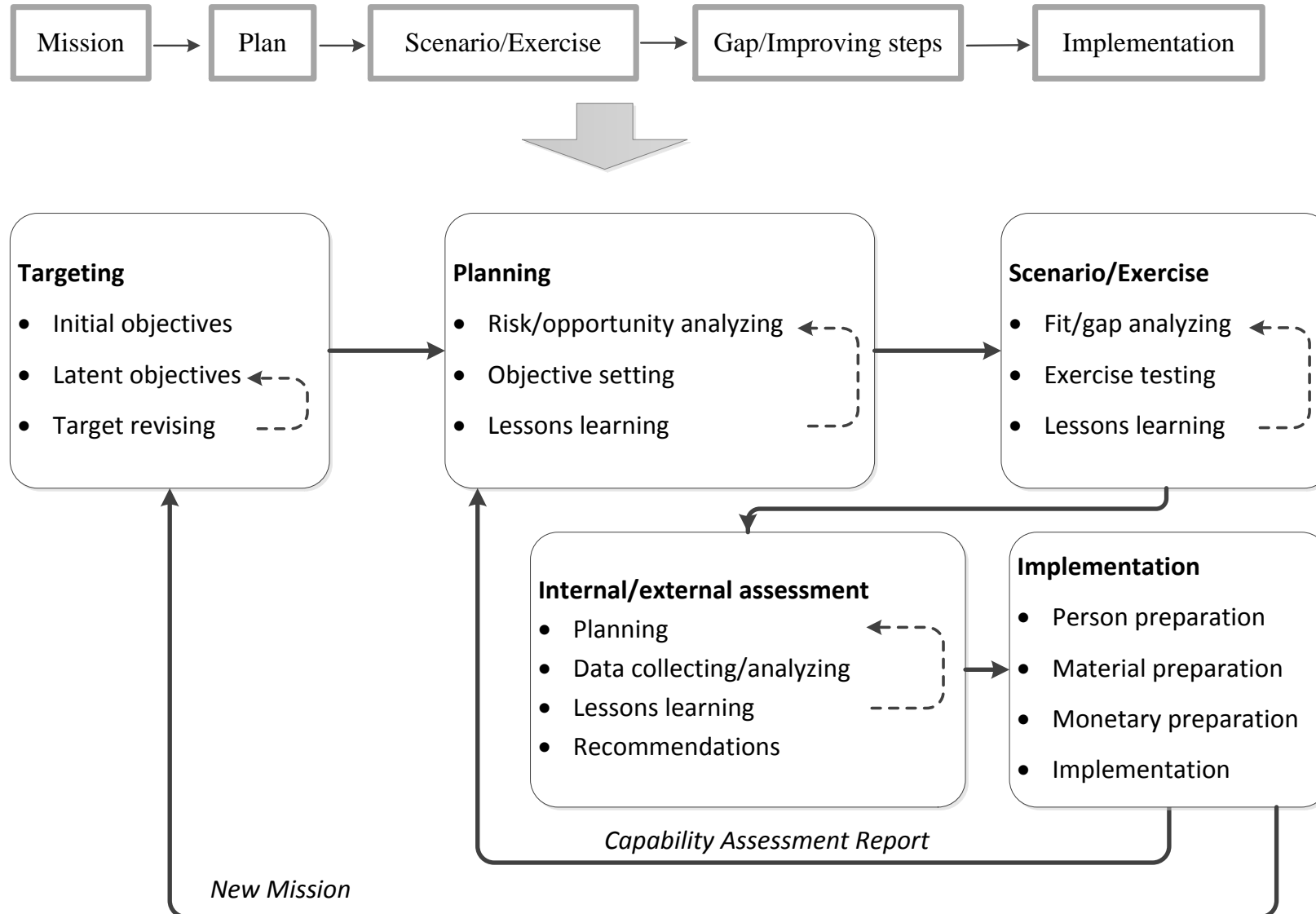
emergency coordination and
command

resource management and
scheduling

System Framework



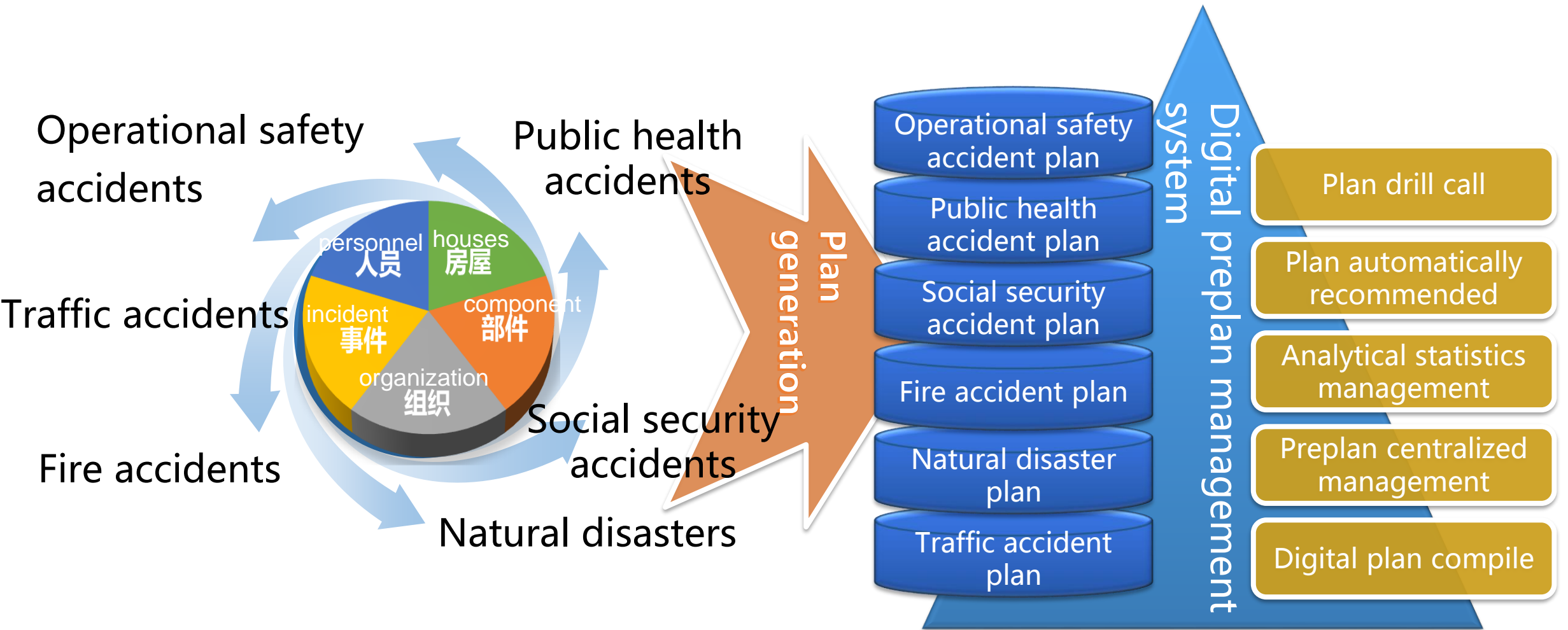
Scenario Development



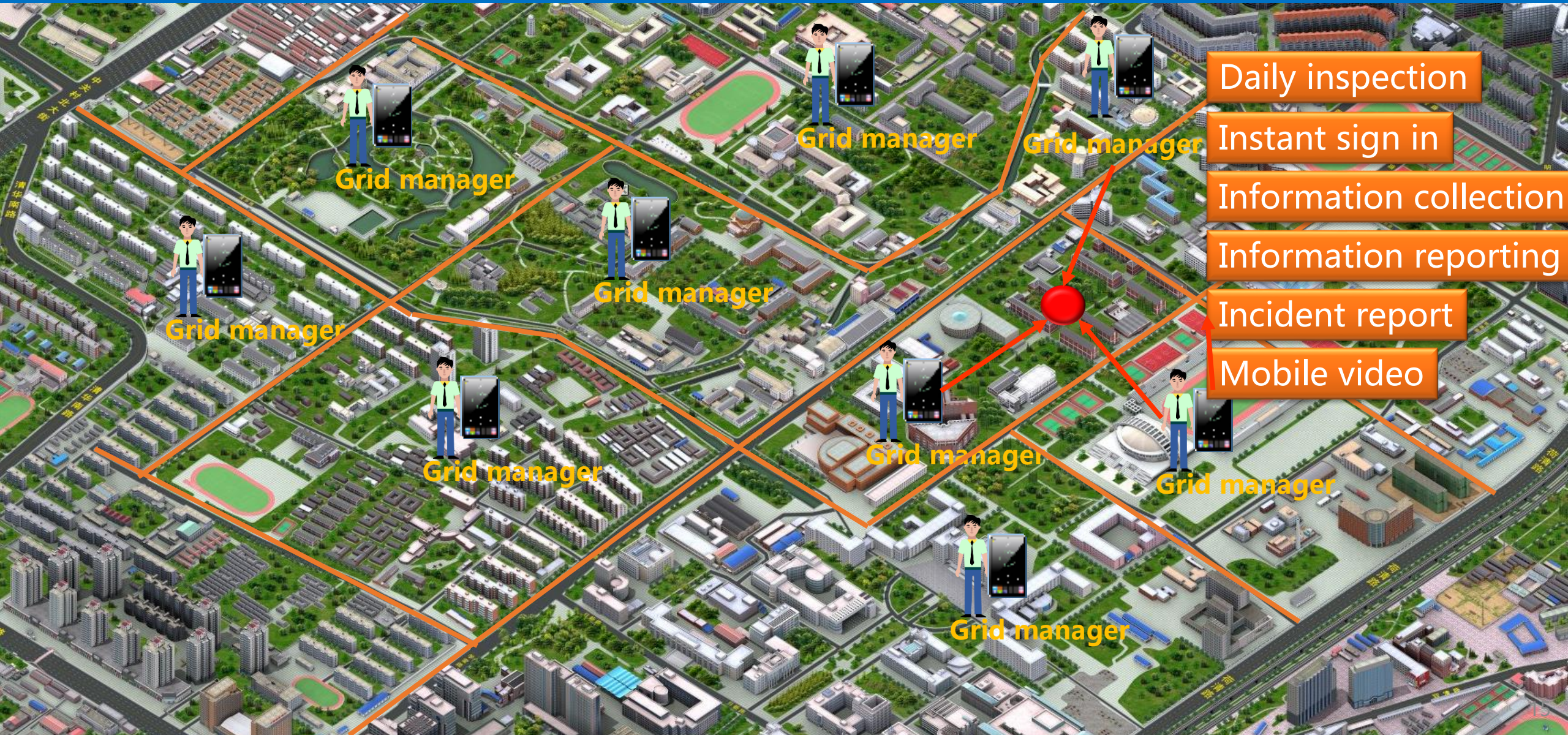
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Campus Plan and Management



Daily Supervision



Daily Supervision and Early Warning

School teachers & students photo upload

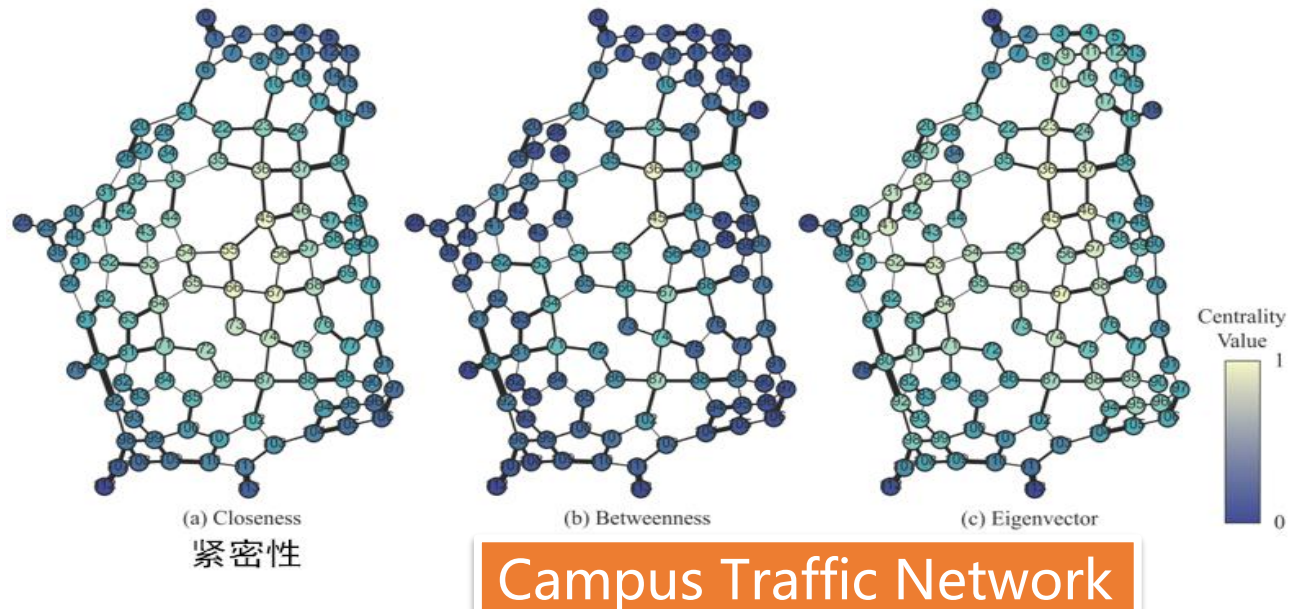
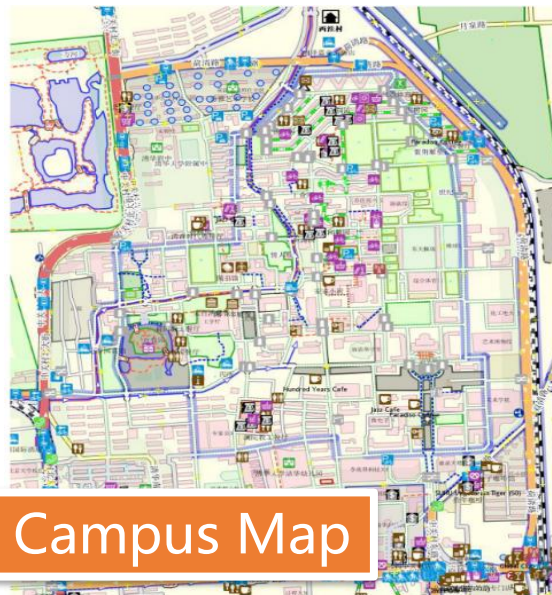
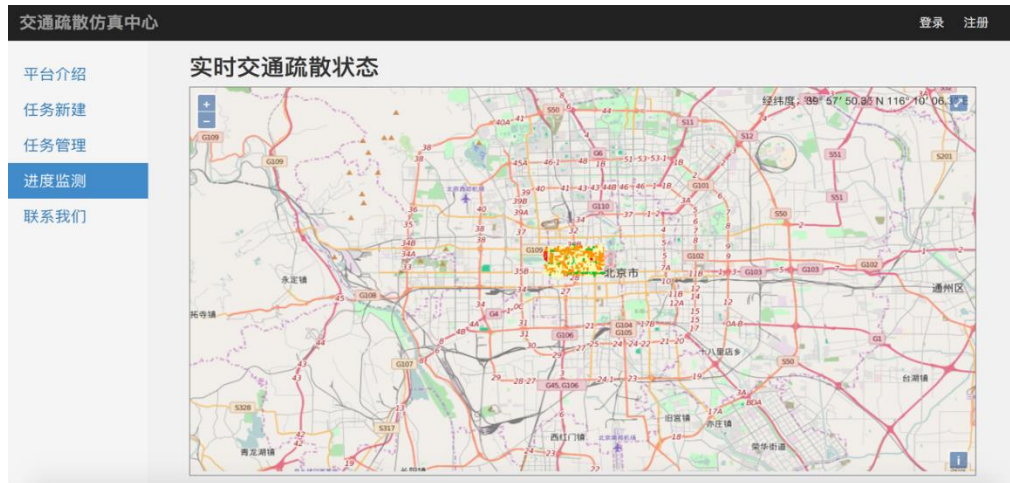


On-campus speed monitoring



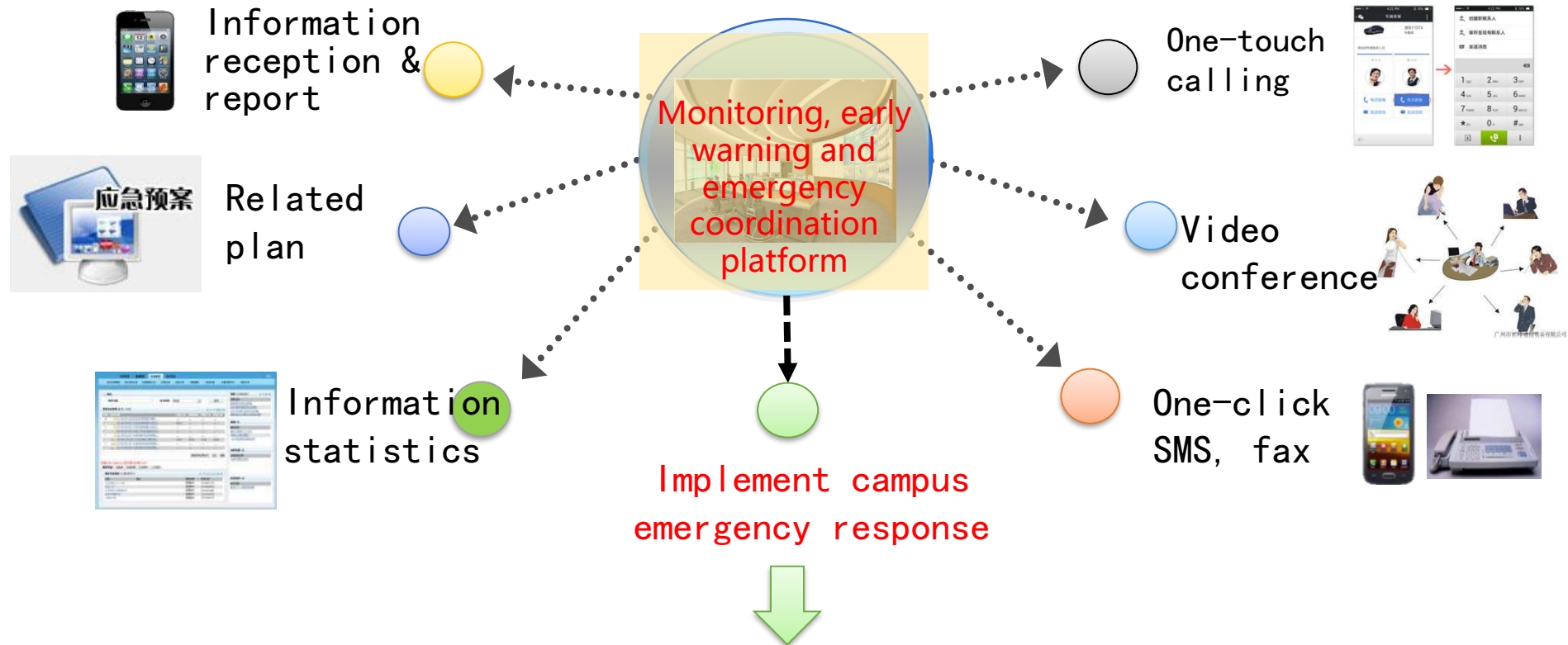
License plate recognition

Important Event Management and Early Warning



Emergency Management

Comprehensive management



Digital plan

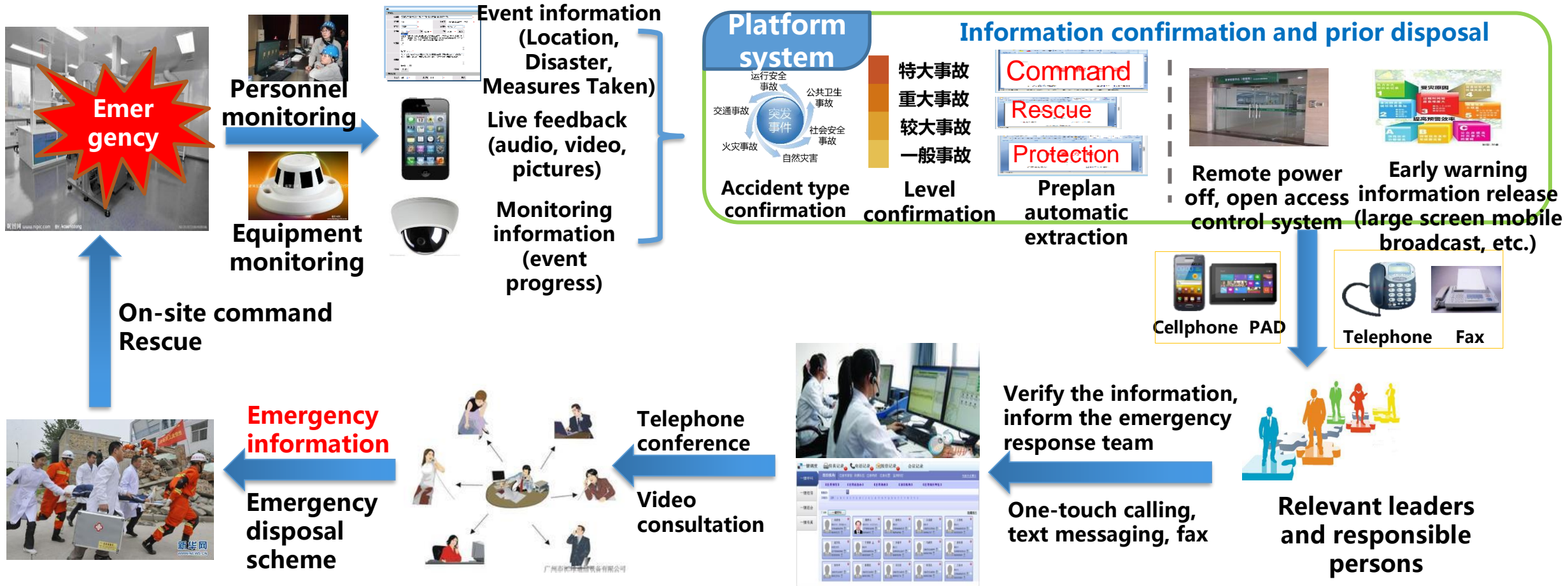
Information collection

Resource scheduling

Emergency coordination

Emergency Management

All stakeholders involved in emergency prevention and closed-loop information



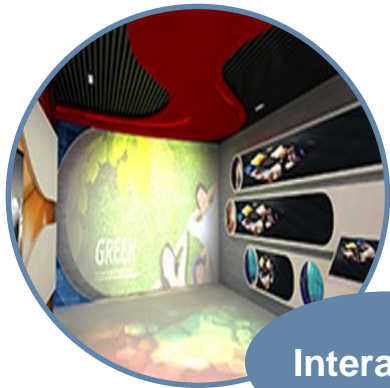
Campus Public Opinion Analysis and Management

Grasp the first three opinion analysis ; play three force roles ; maintain social harmony and stability



Public Safety Education and Training

Provide comprehensive, multi-level, and three-dimensional security training for different types of users and different types of security incidents on campus to improve campus security awareness as a whole.



Interaction

WeChat, Microblog, APP
Social Classroom Activities
Open science practice



Teaching

Personal Safety Education
Public Safety Education
Fire Safety Education
Disaster Safety Education
Traffic Safety Education
Cyber Security Education



Consultation

Risk Hidden Consultation
Fire Knowledge Consultation
Emergency Drill Consultation.

Campus Safety Information Client

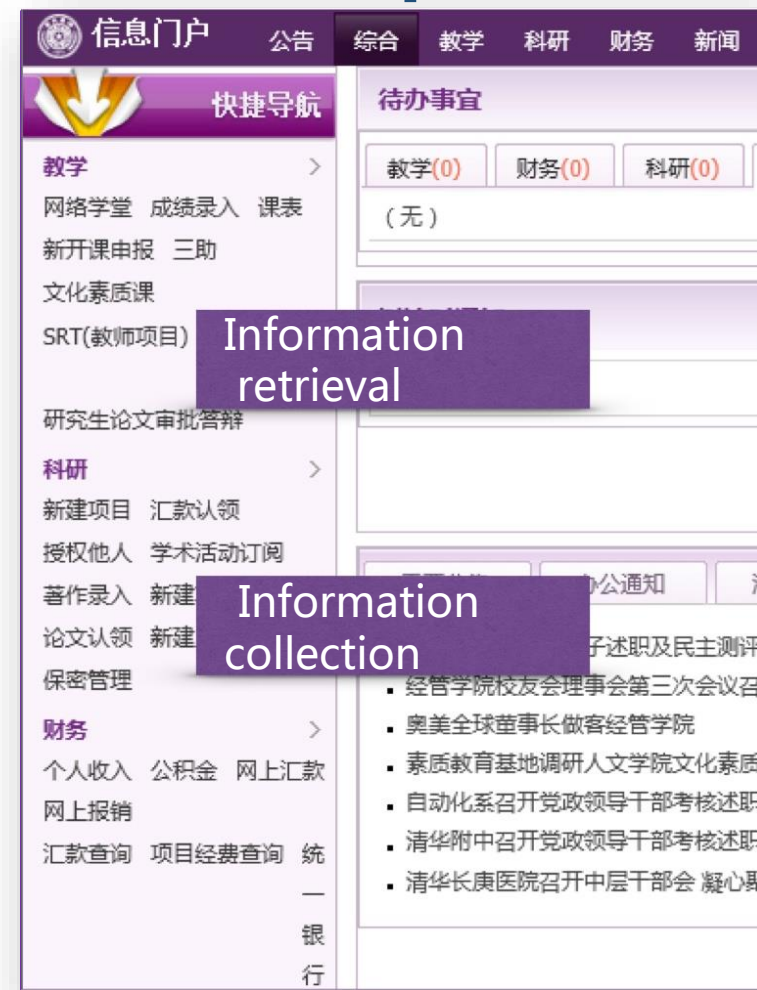
Cellphone APP



Leadership exclusive page



Info portal



Thank you !