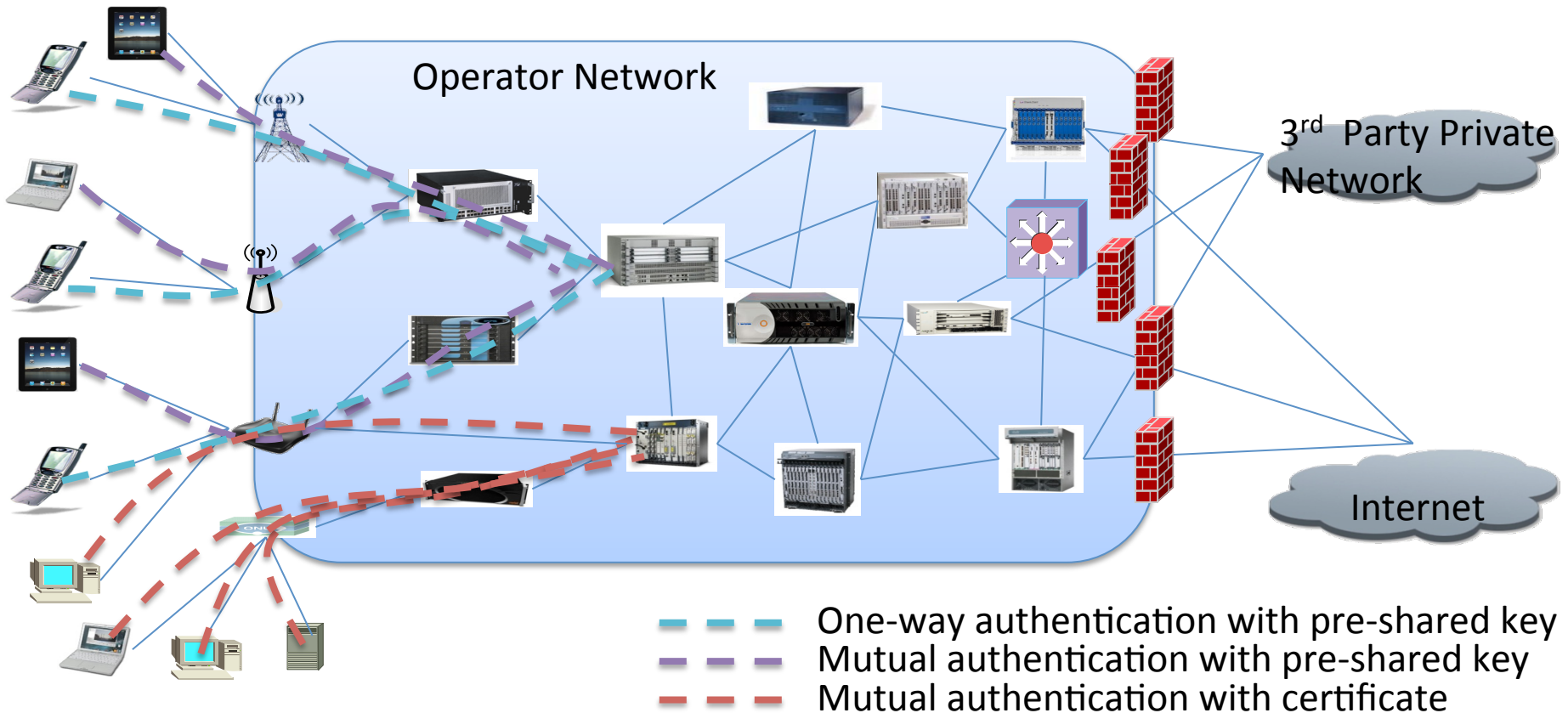# draft-qi-i2nsf-access-network-usecase-00

Author: Minpeng Qi, Xiaojun Zhuang

Current Access Network Security

- Devices for security function is fixed and limited.
- Security function is general and fixed in access procedure

Operator Network

3rd Party Private Network

Internet

- - - One-way authentication with pre-shared key
- - - Mutual authentication with pre-shared key
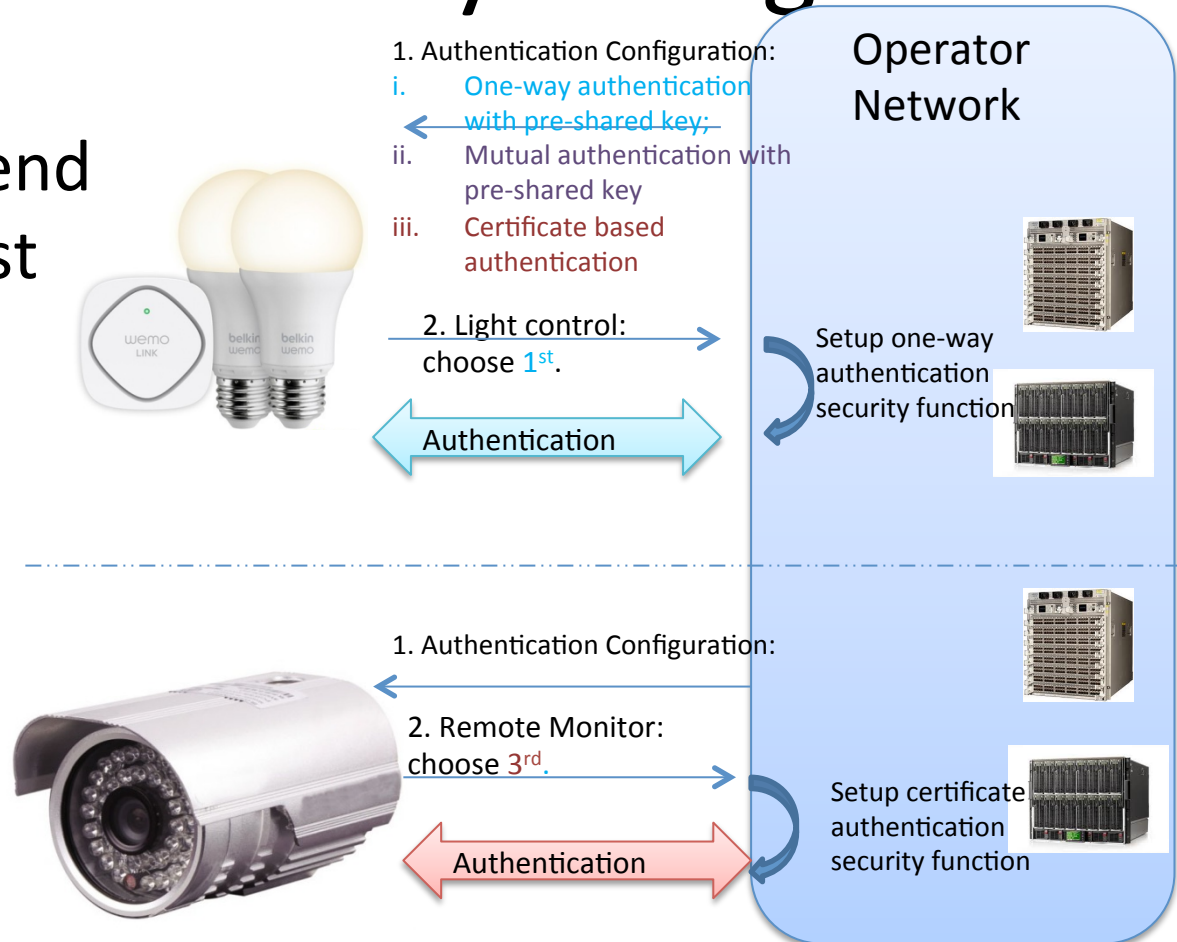- - - Mutual authentication with certificate

Virtualized Security Function

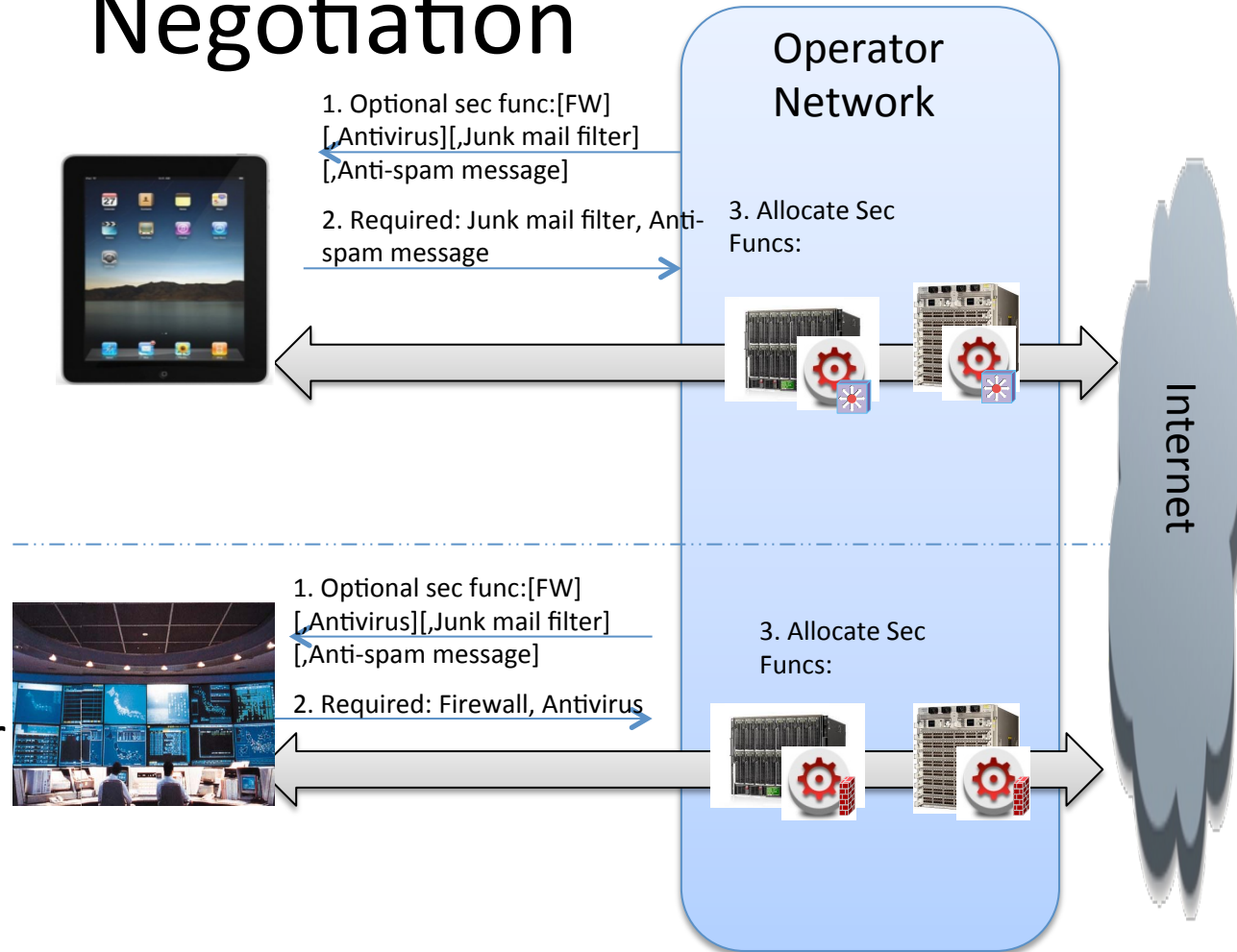- Virtualized Security Function can provide more flexible and reliable protection
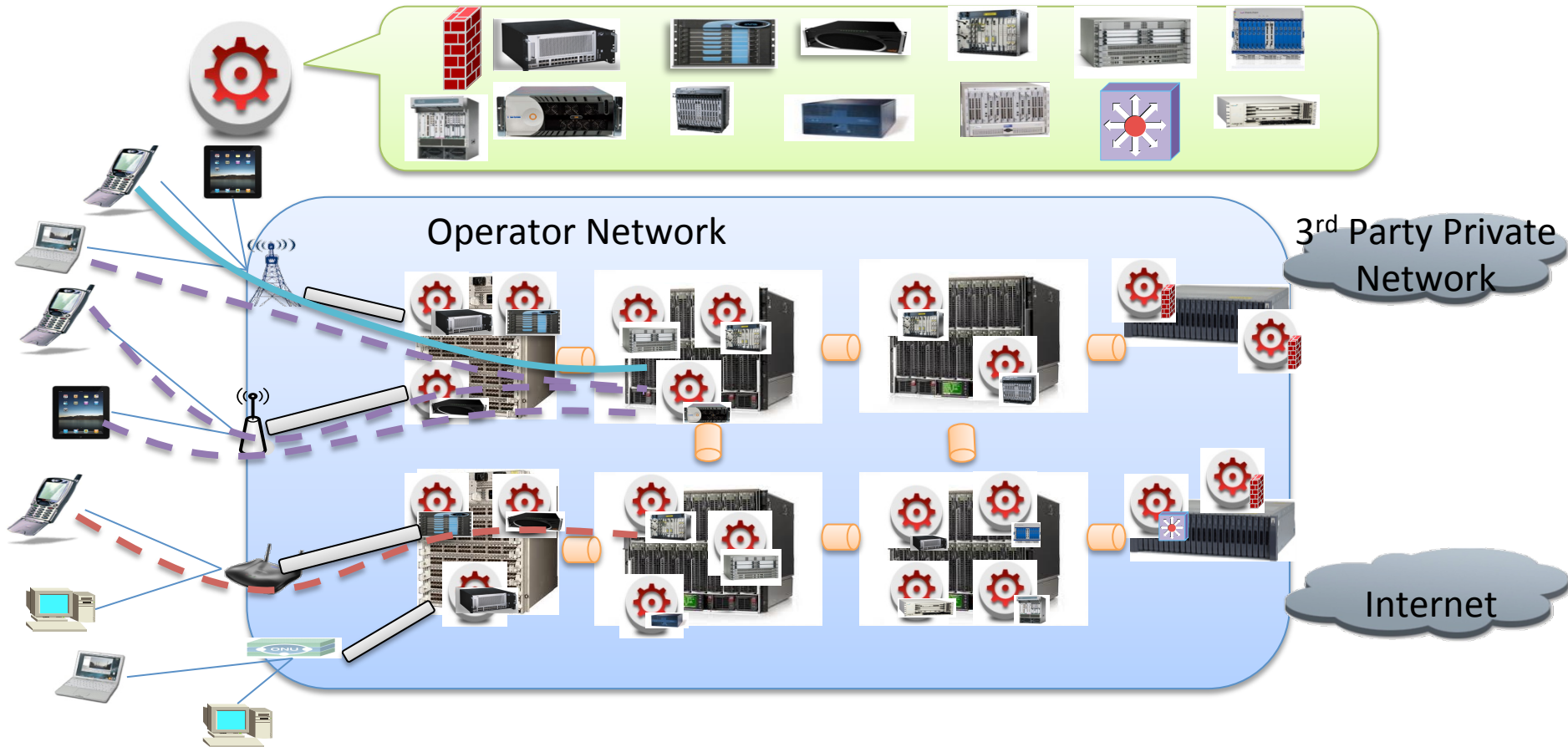
Use Case 1: security configuration

- Network can send configuration list to user side
  - Authentication
  - Encryption
  - etc.

1. Authentication Configuration:
i. One-way authentication with pre-shared key;
ii. Mutual authentication with pre-shared key
iii. Certificate based authentication

2. Light control: choose 1st.

Authentication

Operator Network

Setup one-way authentication security function

1. Authentication Configuration:

2. Remote Monitor: choose 3rd.

Authentication

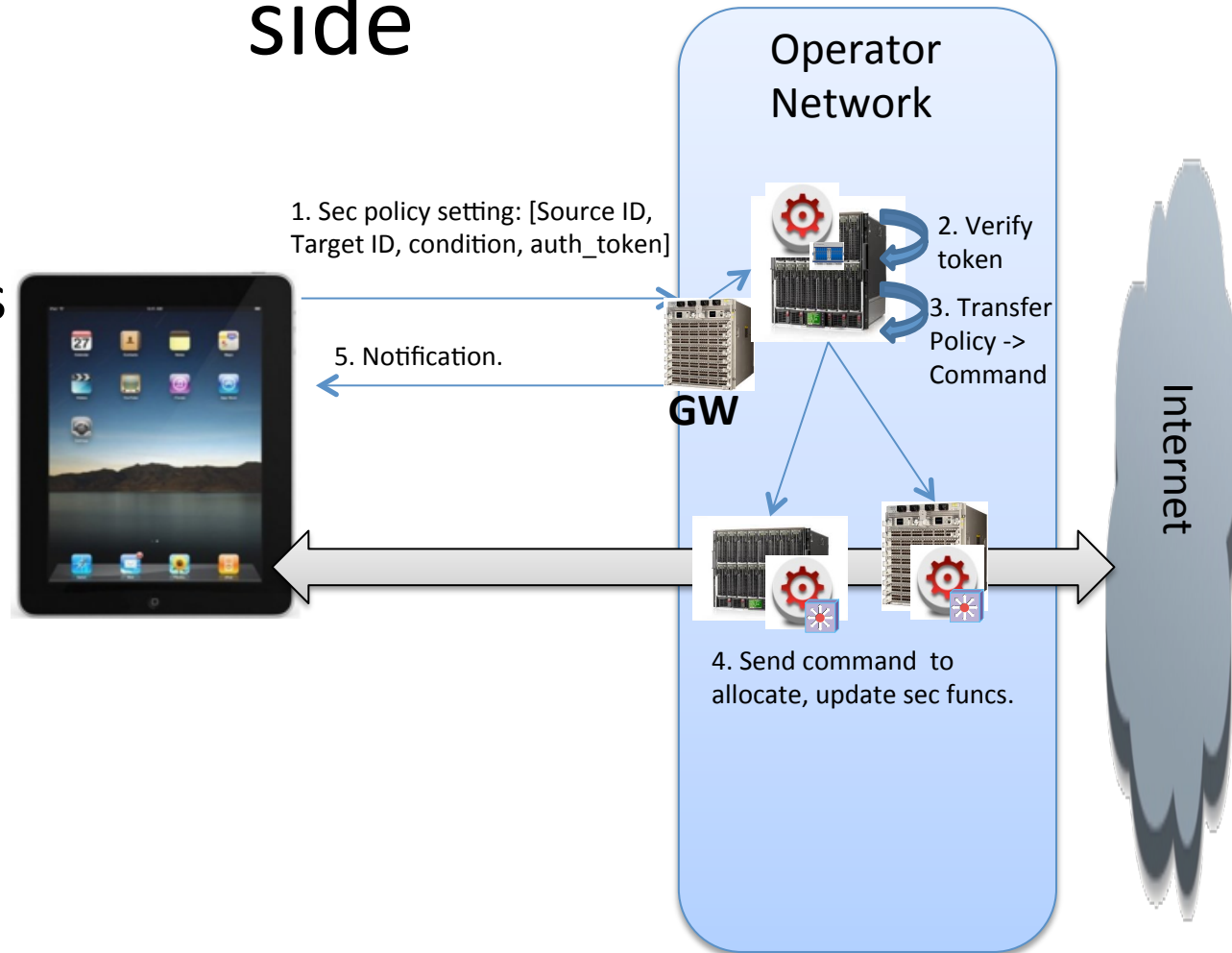Setup certificate authentication security function

Use Case2: Optional security function Negotiation

- Network can send optional security function list to user side
  - Firewall
  - Antivirus software
  - Junk mail filter
  - Anti-spam message
  - etc.

Operator Network

1. Optional sec func:[FW] [,Antivirus][,Junk mail filter] [,Anti-spam message]

2. Required: Junk mail filter, Anti-spam message

3. Allocate Sec Funcs:

1. Optional sec func:[FW] [,Antivirus][,Junk mail filter] [,Anti-spam message]

2. Required: Firewall, Antivirus

3. Allocate Sec Funcs:

Internet

Use Case3: Security Request from user side

- User device sends specific security services request to operators.

- Operator Network increases, and/ or updates security functions.

Operator Network

1. Sec policy setting: [Source ID, Target ID, condition, auth_token]

2. Verify token

3. Transfer Policy -> Command

5. Notification.

GW

4. Send command to allocate, update sec funcs.

Internet

Thank you!