ExperTeach

Demo-Course: Network Technologies

The Relevant Details at One Glance!

Chapter Overview

1   Networks— An Introduction (Excerpt)
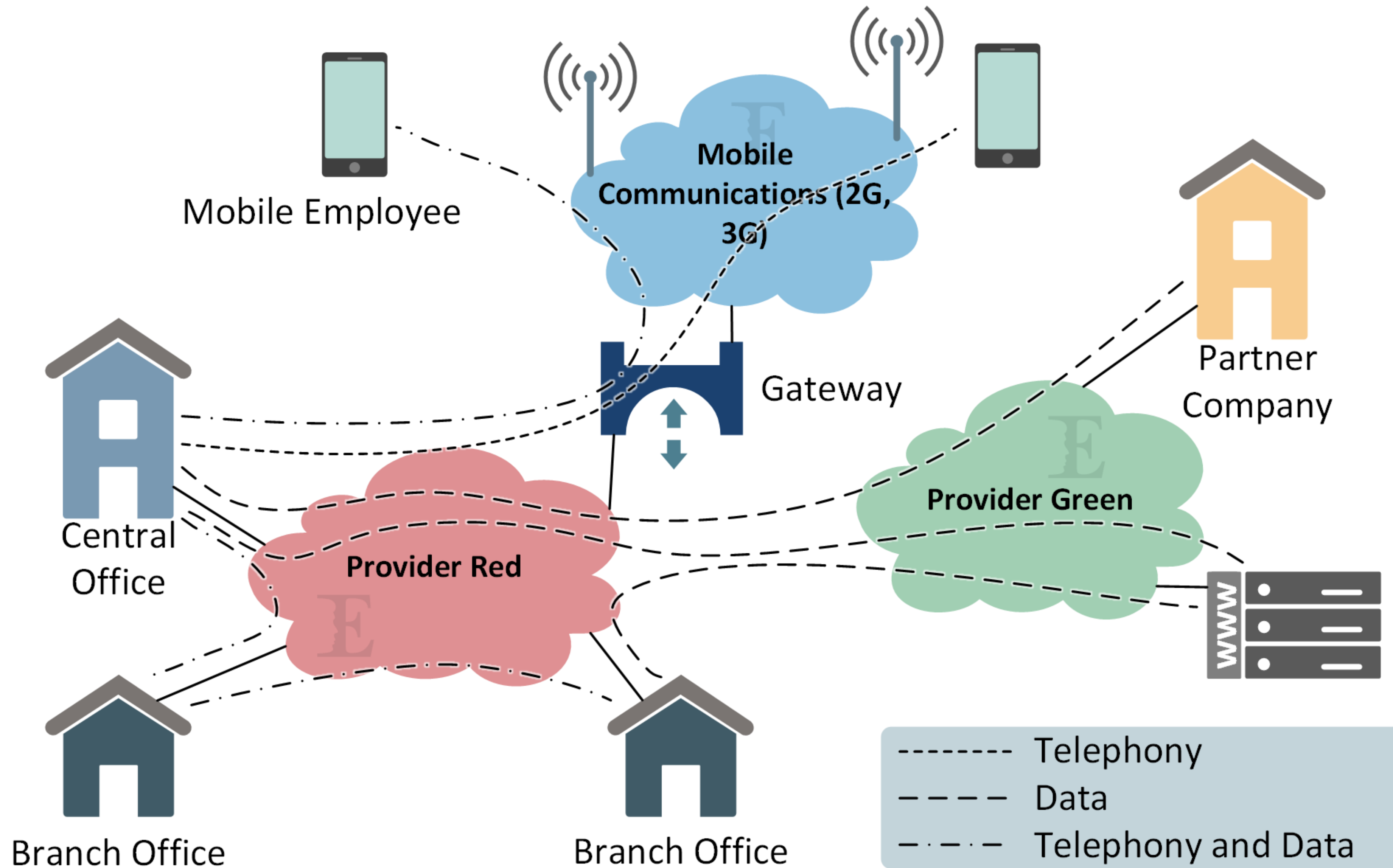
1 Networks— An Introduction (Excerpt)

- **Inter- and intra-site data streams**
- **Communication with partners and mobile workers**
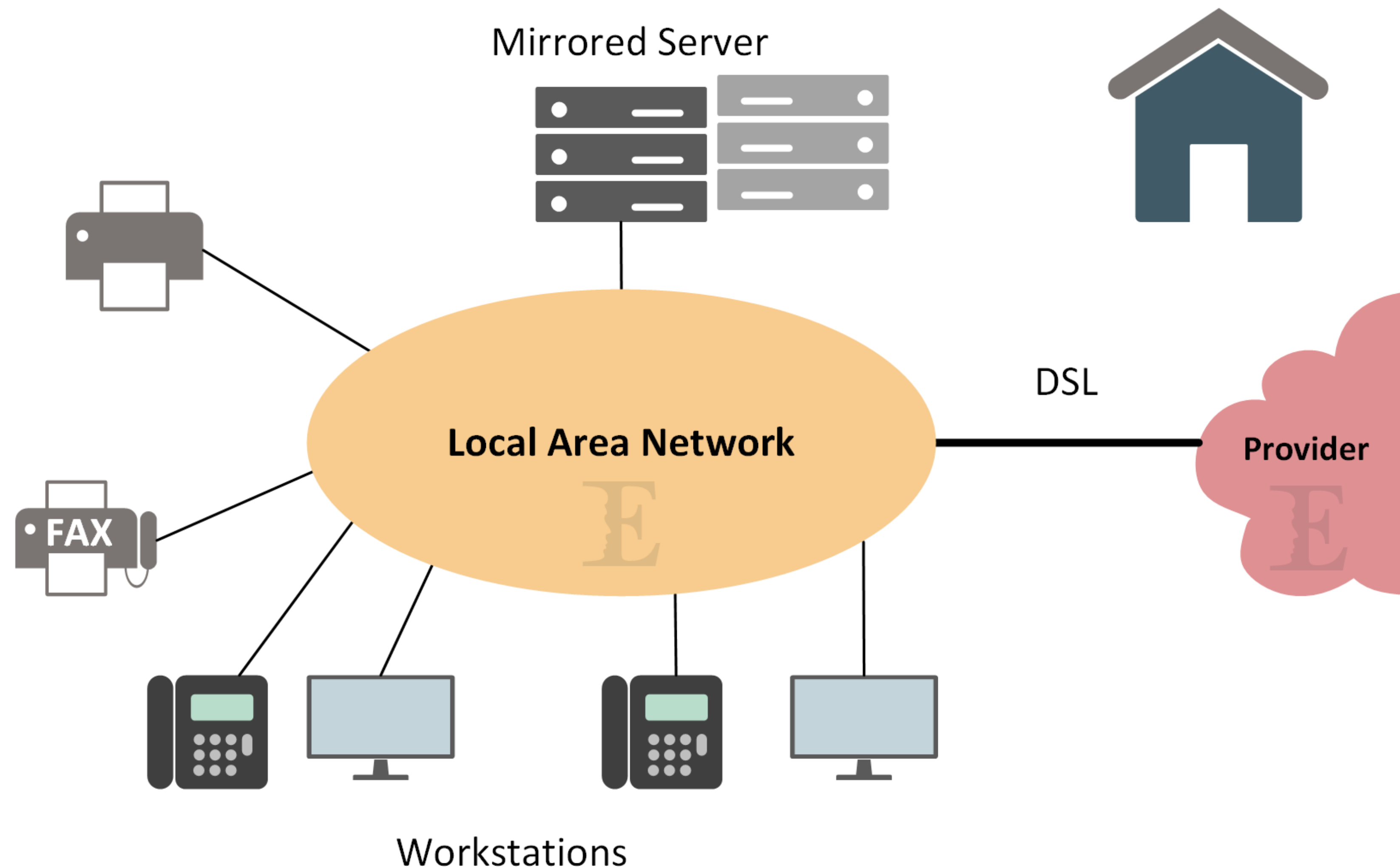- **Diversity: voice, data, and video, if required**
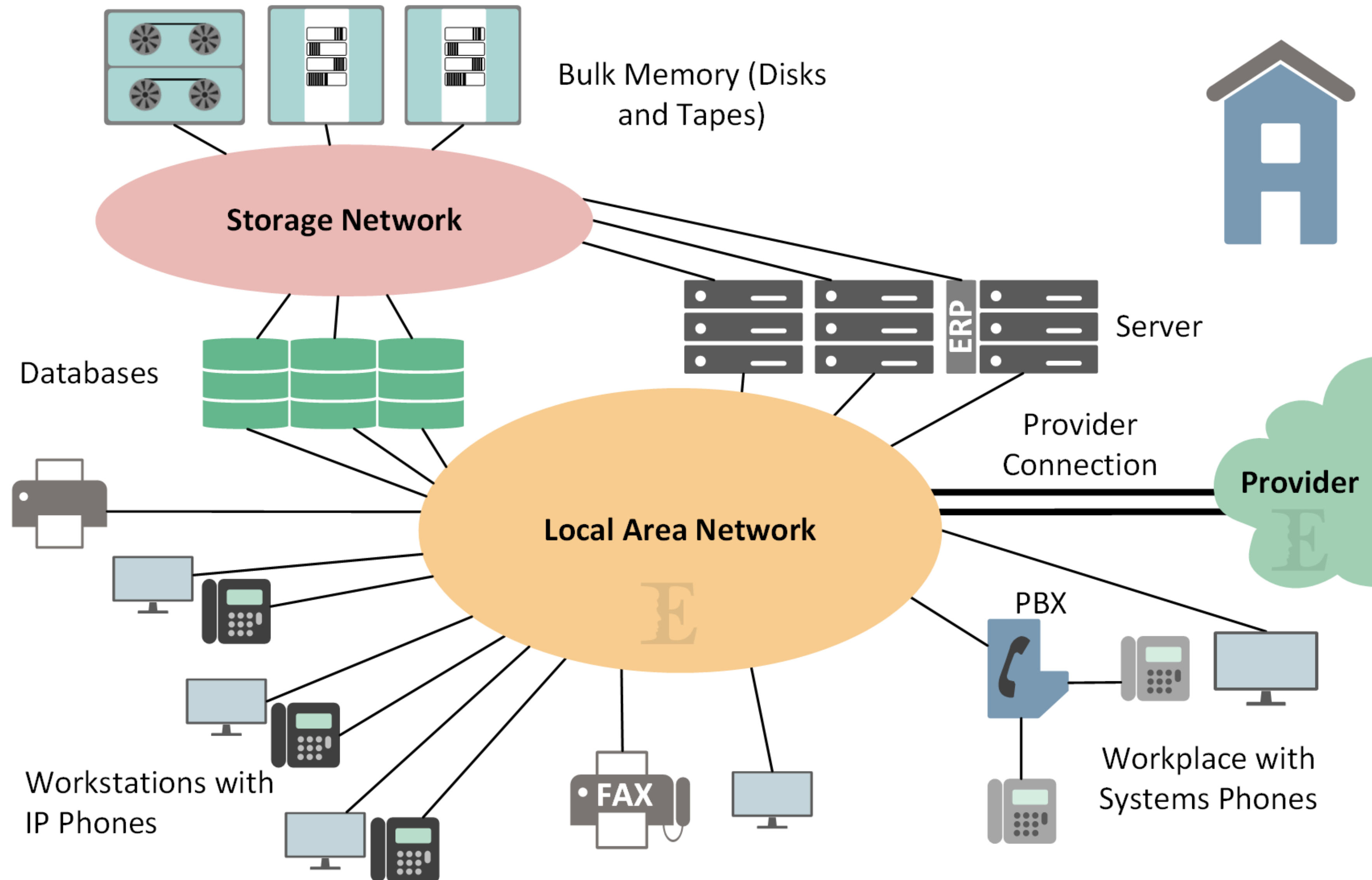
- **Workstations with telephones, PCs, and peripheral devices (printer, fax)**
- **Servers and databases**
- **Mass storage**
- **Redundant provider connection**

1.1.2 The Branch Offices

- Also workstations with telephones, PCs, and peripheral devices

- Some servers may be mirrored.

- Often large number of branch offices

- Provider connection therefore under strong cost pressure

- DSL as a cost-efficient option

1-6

1.1.3 Mobile Workers
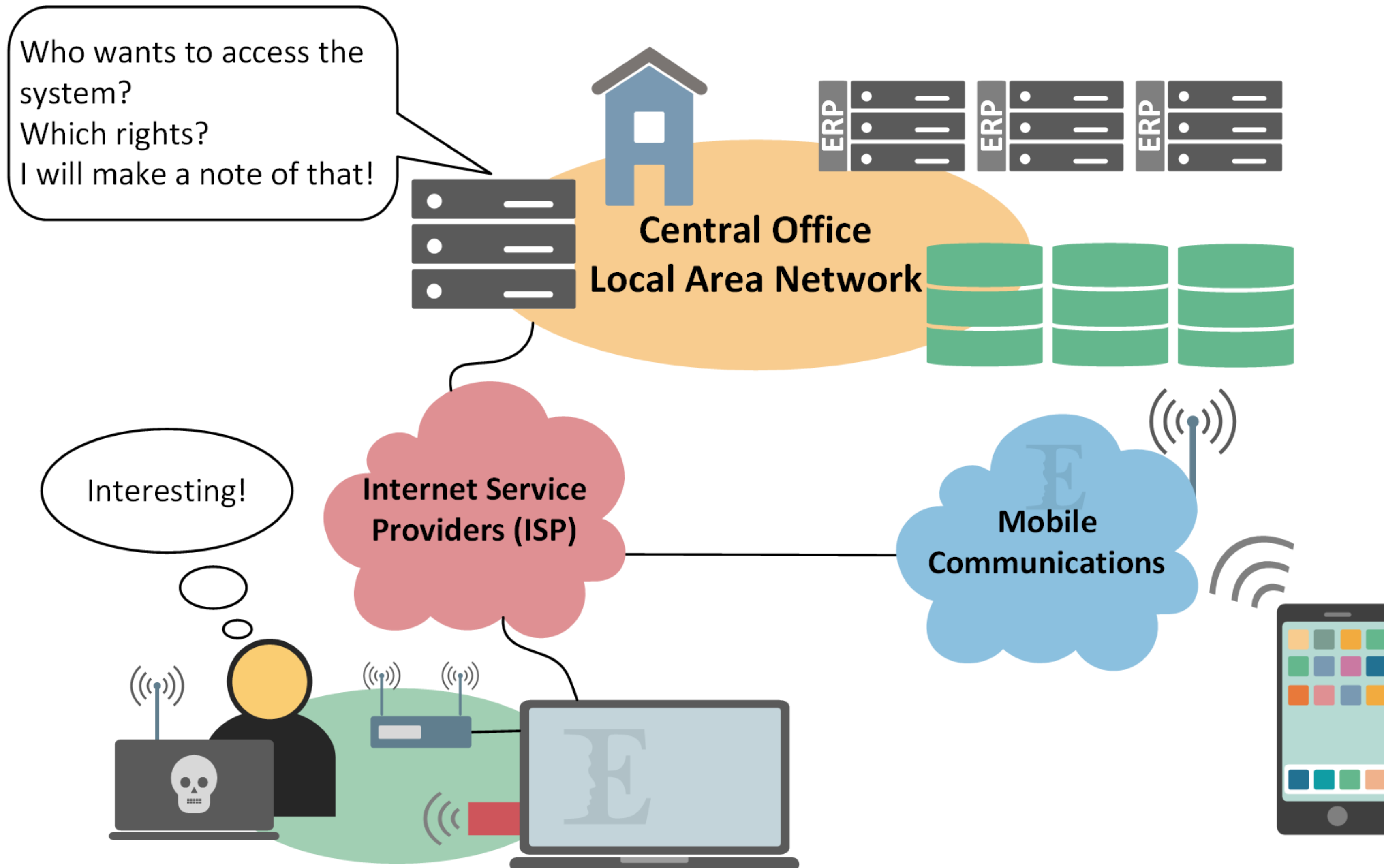
- Laptop, smart phone over telephone network, mobile radio or WLAN

- Central topic: security

- At the head office:
  - Authentication (who?)
  - Authorization (which rights?)
  - Accounting
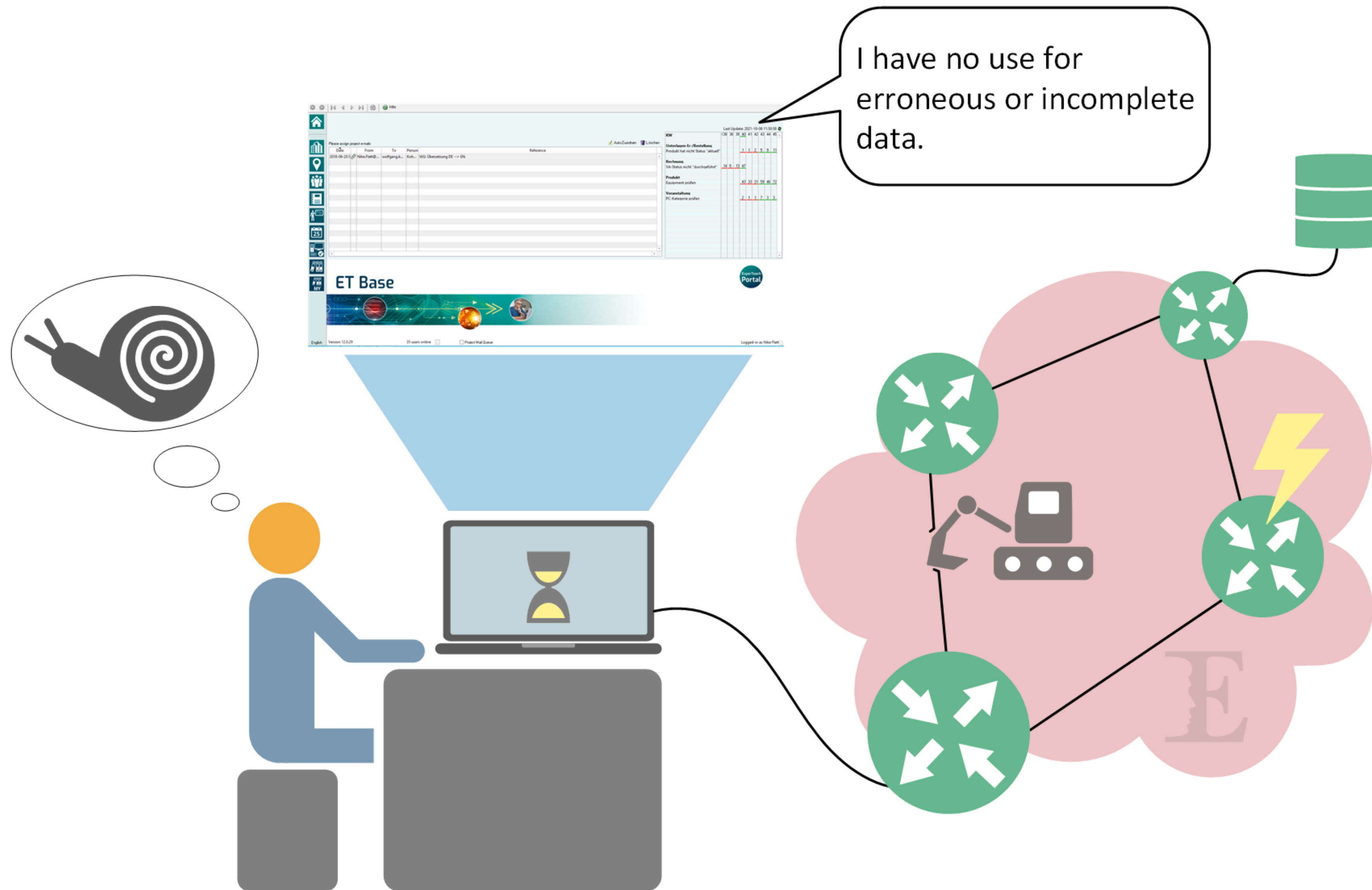
- Why connect devices and sites?

- The real objective: to enable applications to communicate

- Different applications make different demands on the network.

- User satisfaction is crucial.

to: info@experteach.de

Hello all, please take notice of the following future changes of our e-mail system: ...

0100 1000 0110 0001 0110 1100 0110 1100 0110 1111 ...

H   a   l   l   o

ASCII Table

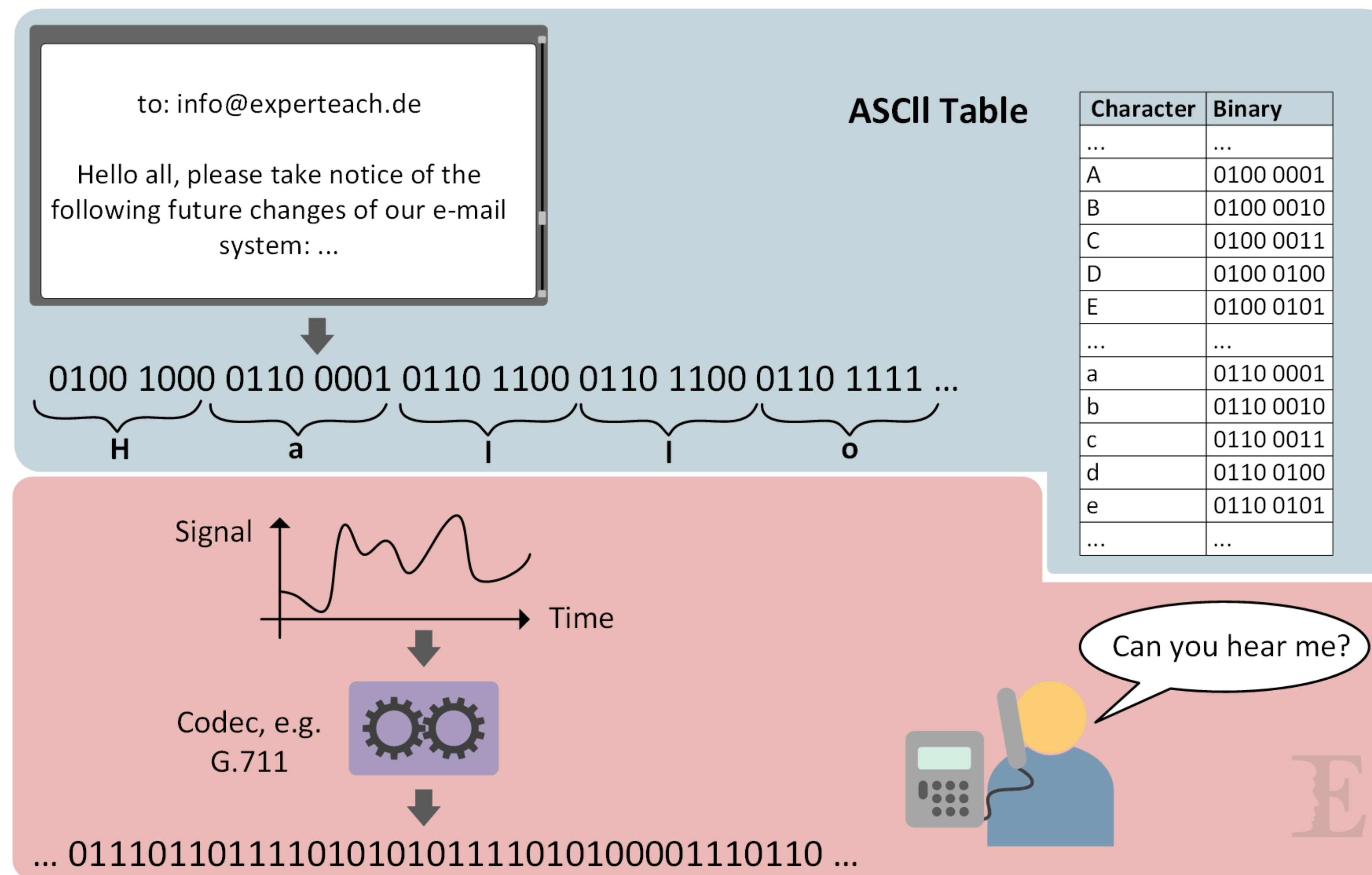| Character	Binary
...	...
A	0100 0001
B	0100 0010
C	0100 0011
D	0100 0100
E	0100 0101
...	...
a	0110 0001
b	0110 0010
c	0110 0011
d	0110 0100
e	0110 0101
...	...

Signal

Time

Codec, e.g. G.711

Can you hear me?

... 0111011011110101010101110101000011101110 ...

- **Modern networks transport voice and data in digital format only.**

- **Applications using analog source data need to digitize them.**

- **The network transports bits only (ones and zeros).**

	Delay	Jitter	Bitrate	Monitoring of Errors (Error /Loss)
Mass Data				
E-Mail	–	–	●●	●●●/●●●
File Transfer	–	–	●●	●●●/●●●
Backups	–	–	●●	●●●/●●●
Data, interactive				
WWW	–	–	●	●●●/●●●
Citrix	●●	●	●●	●●●/●●●
Database	●●	●	●●	●●●/●●●
SAP	●●	●	●●	●●●/●●●
Streaming				
Web Radio	●	●●	●●●	●/●●
IP TV	●	●●	●●●	●● /●●●
Video on Demand	●	●●	●●●	●● /●●●
Real Time				
Telephony	●●●	●●●	●●●	●/●●
Video Conferencing	●●●	●●●	●●●	●/●●

- Delay and jitter: time requirements
- Bit rate: data rate requirements (bandwidth)
- Error: falsified data
- Loss: lost data

Legend:
- – : does not have to be monitored
- ● : should be monitored
- ●● : has to be monitored
- ●●● : has to be stricty monitored

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Thank you very much
for your attention!