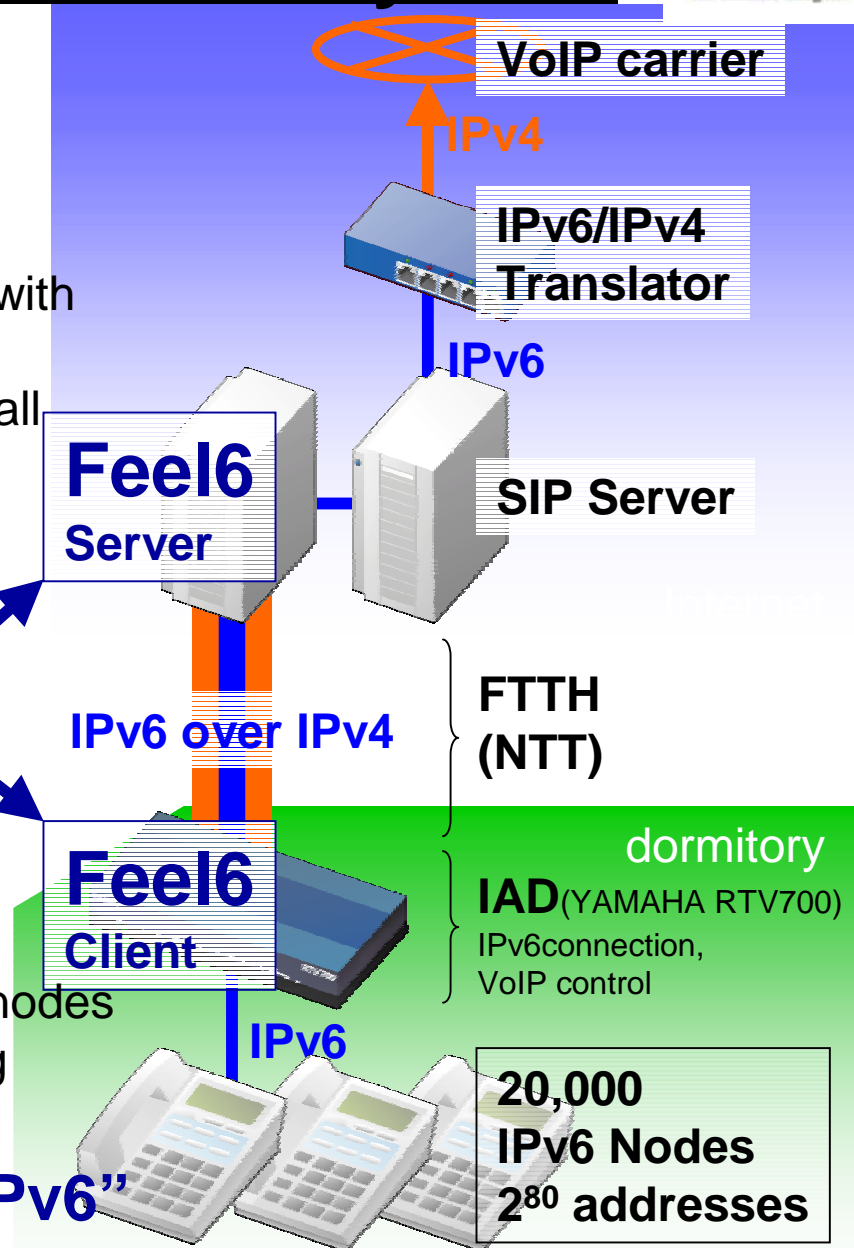# Large-scale introduction of IPv6 system

- **280** sites all over Japan

- IPv6 Node as many as **20,000**

The IP Centrex service, "IP Business Phone", developed by FreeBit, has got a major contract with Kyoritsu Maintenance, a nation-wide dormitory supplier. The IPv6 phones will be installed into all of their rooms, that is as many as 20,000.

Utilize a technology called, **"Feel6"**, which enables secured IPv6 network over existing IPv4 network

- Easiness to design the address management scheme regardless the tremendous number of nodes
- Management of terminal versions by achieving the reachability to each terminal over Internet

"Realized the cost reduction by IPv6"

VoIP carrier

IPv4

IPv6/IPv4 Translator

IPv6

Feel6 Server

SIP Server

IPv6 over IPv4

FTTH (NTT)

dormitory

Feel6 Client

IAD(YAMAHA RTV700)
IPv6connection,
VoIP control

IPv6

20,000 IPv6 Nodes 2^{80} addresses
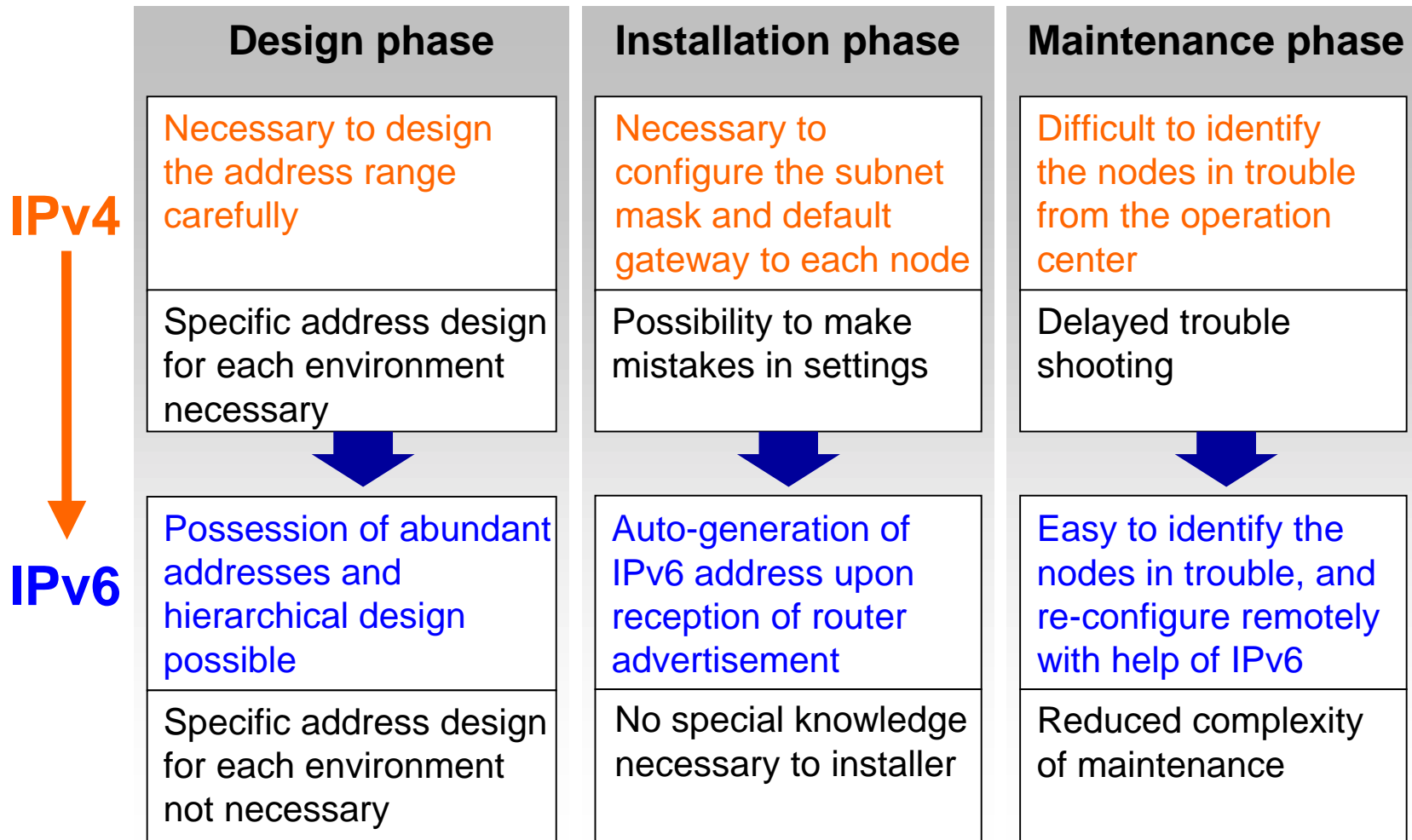
Note) Information as of 2004/Nov

Some additional information

- VoIP/SIP deployment using IPv6
- SIP/MIPv6 reference implementation
  - USAGI provides a reference implementation for Linux
- VoIP/SIP interoperability task force
  - Interoperability among providors
  - Welcome from oversea
  - Collaboration with MFN

Cost reduction made possible by IPv6

	Design phase	Installation phase	Maintenance phase
IPv4	Necessary to design the address range carefully	Necessary to configure the subnet mask and default gateway to each node	Difficult to identify the nodes in trouble from the operation center
	Specific address design for each environment necessary	Possibility to make mistakes in settings	Delayed trouble shooting
IPv6	Possession of abundant addresses and hierarchical design possible	Auto-generation of IPv6 address upon reception of router advertisement	Easy to identify the nodes in trouble, and re-configure remotely with help of IPv6
	Specific address design for each environment not necessary	No special knowledge necessary to installer	Reduced complexity of maintenance

FreeBit Co., Ltd.

Significant reduction of network design steps

IPv4 ⟶ IPv6

TEL	Configure phone number
TEL	Configure default gateway
TEL	Configure subnet mask
TEL	Configure IP address
LAN	Configure VPN of router
NET	Configure VPN
NET	Configure network address

TEL	Configure phone number

Not required

Not required

Router advertisement by IPv6

Feel6 ID and PW

Feel6 ID and PW

2^{80} addresses

FreeBit Co., Ltd.

Launch of 20,000 nodes in a very short term

FreeBit Co., Ltd.

Service specification System design	Evaluation	Installation

2004/3   6   9   2005/1
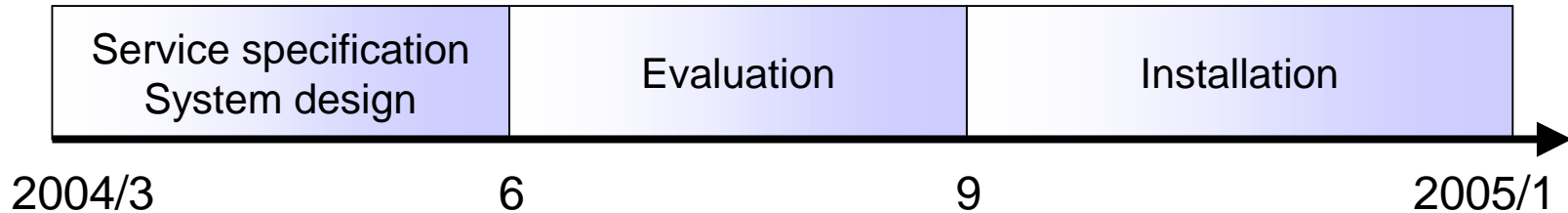
Abstraction of installation procedure into 3 patterns depending on the number of rooms, made possible by the easiness in IPv6 address design

Easy installation due to the auto-generation of IPv6 address

Realization of remote monitoring and quick maintenance of the nodes, made possible by fixed IPv6 addresses