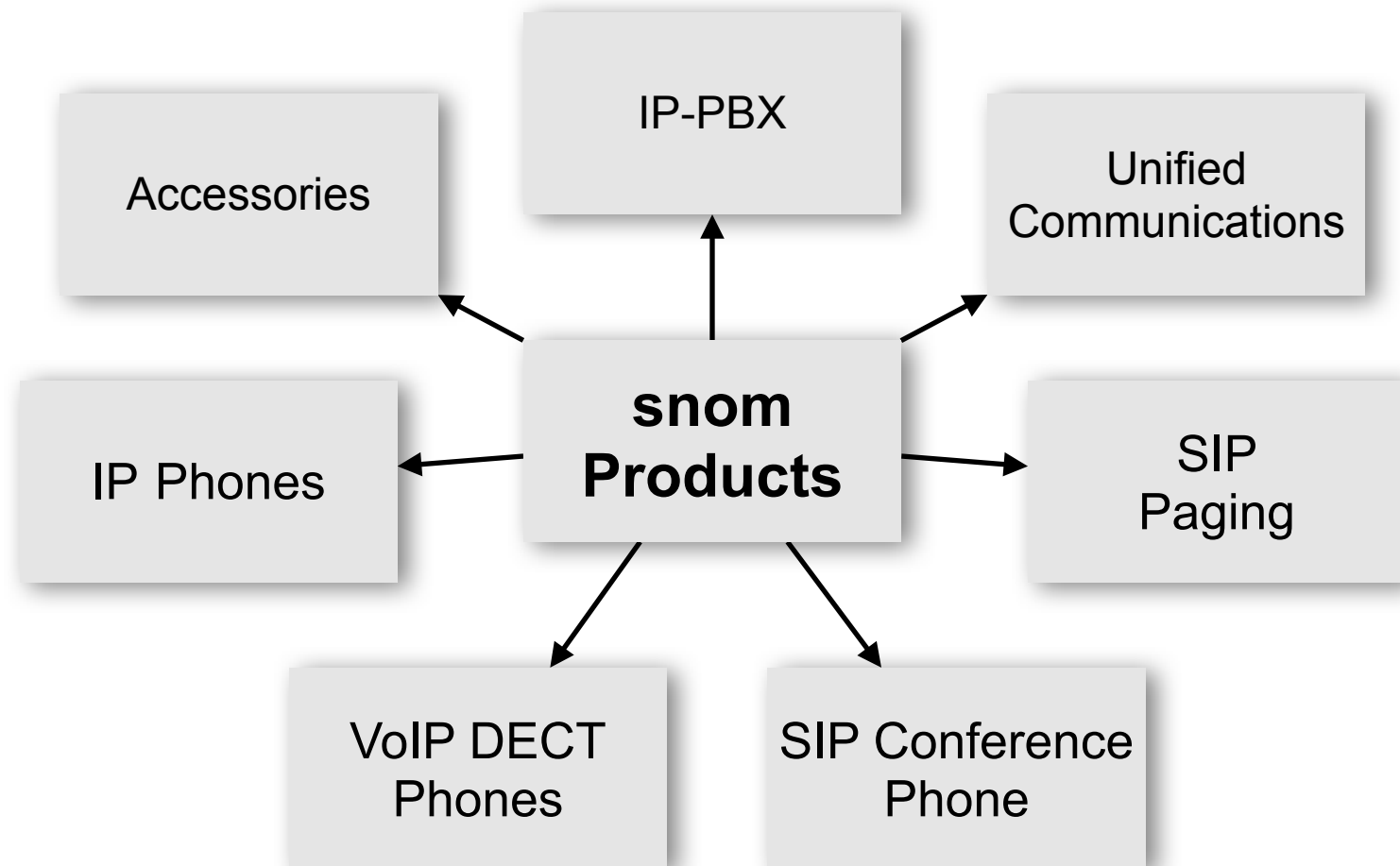
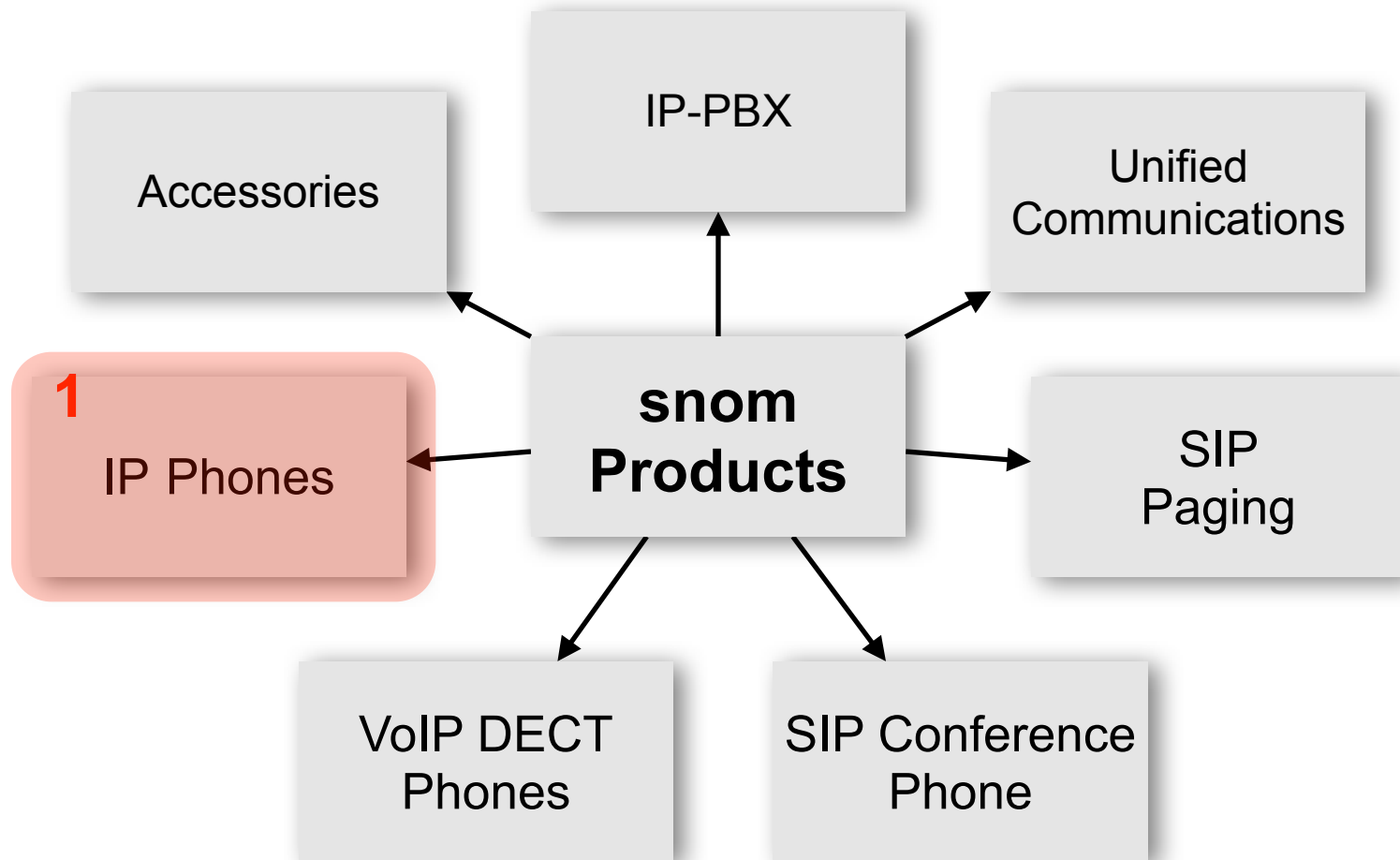


ST110: Product Overview





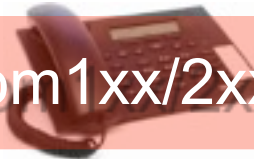
Introduction: IP Phones



IP Phones: History



snom100



snom190



snom200



snom220

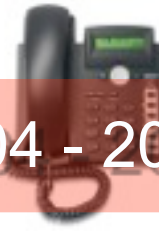
snom1xx/2xx series: 1998 - 2003



snom360



snom320



snom300



snom370

snom3xx series: 2004 - 2007



snom820



snom870



snom821



snom720



snom760

snom8xx/7xx series: 2008 - 2011

IP Phones: Current portfolio



snom100



snom190



snom200



snom290



snom280



snom320



snom300



snom370



snom800



snom870



snom821



snom720



snom760

IP Phones: Firmware Support



snom100



snom190



snom200



snom220

No Firmware Updates - No Support



snom360

Firmware Support

snom820



snom320



snom300



snom370



snom870



snom821

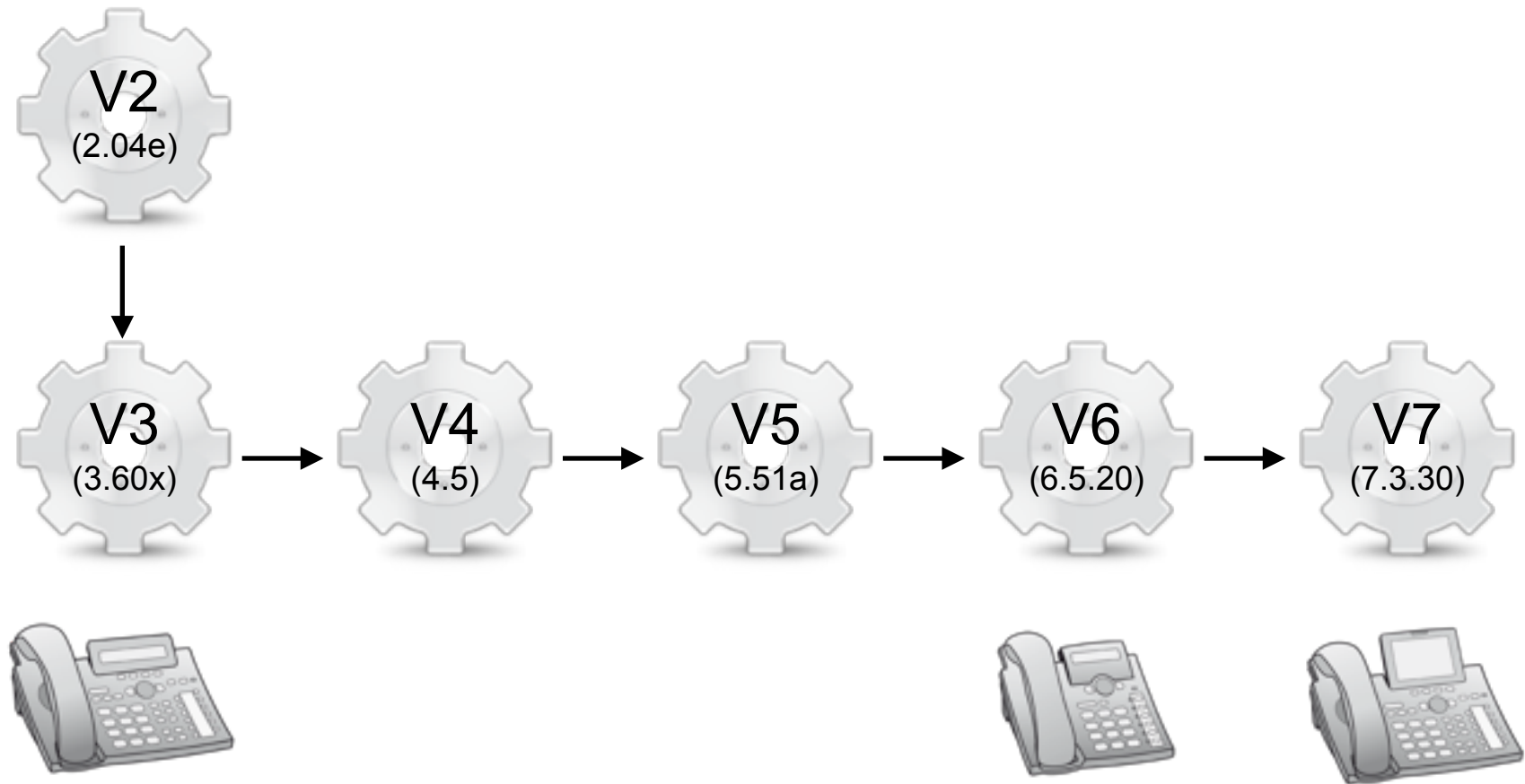


snom720

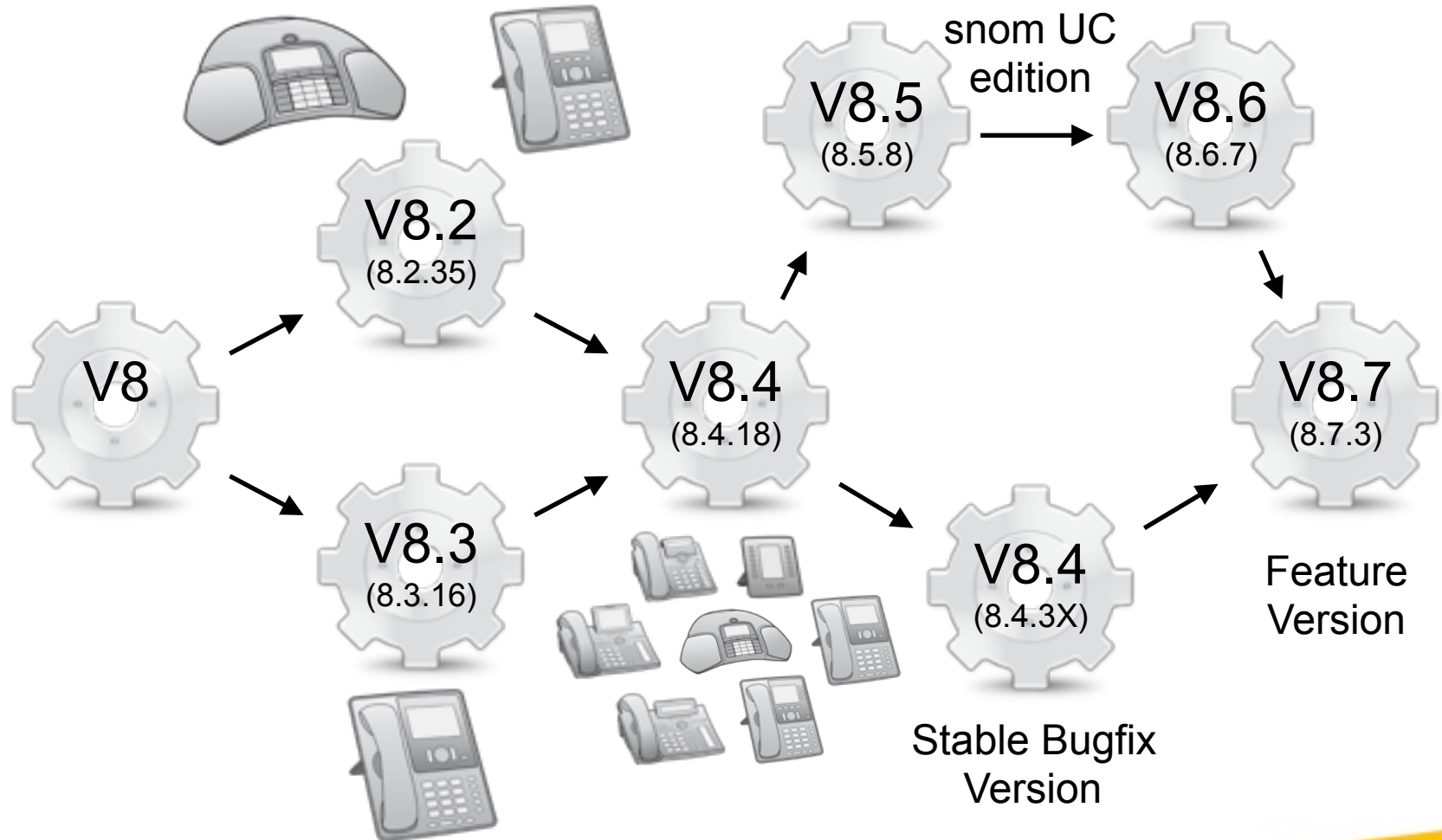


snom760

IP phones: SIP Firmware V2-V7



IP phones: SIP Firmware V8



IP Phones: Question and Answers



IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom???	Graphical	128 x 48 px	2 (1 bit)	

IP Phones: Display

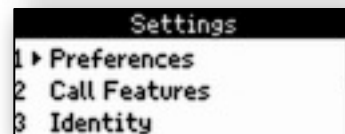
Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphical	128 x 48 px	2 (1 bit)	

IP Phones: 1-bit Graphical Display



snom720

128 x 48



IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom???	Text only	24 x 2 lines	2 (1 bit)	

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 

IP Phones: Text-Only Display



snom320

← General Settings →
Contrast Lang

Backlight from 0004132CB937

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom???	Graphic	480 x 272 px	True (24 bit)	

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	



IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom???	Graphic	240 x 128 px	Greyscale (5 bit)	

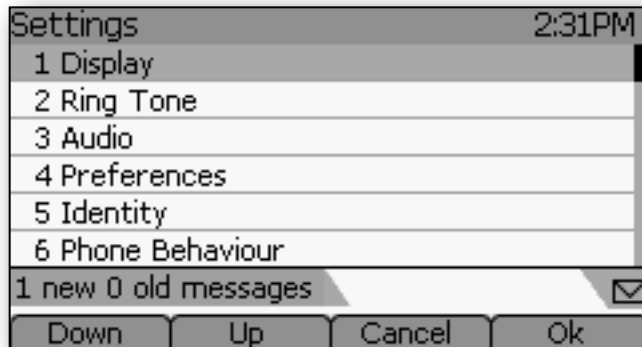
IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	

IP Phones: 5-bit Graphical Display



snom370



240 x 128 pixel
Aspect Ratio: 1,875:1

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom???	Graphic	320 x 240 px	True (24 bit)	

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom760/820 /821	Graphic	320 x 240 px	True (24 bit)	

IP Phones: Graphical Display



IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom760/820 /821	Graphic	320 x 240 px	True (24 bit)	
snom???	Graphic	128 x 64 px	2 (1 bit)	

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom760/820 /821	Graphic	320 x 240 px	True (24 bit)	
snom360	Graphic	128 x 64 px	2 (1 bit)	

IP Phones: 1-bit Graphical Display



snom360



128 x 64 pixel
Aspect Ratio: 2:1

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom760/820 /821	Graphic	320 x 240 px	True (24 bit)	
snom360	Graphic	128 x 64 px	2 (1 bit)	
snom???	Text only	16 x 2 lines	2 (1 bit)	

IP Phones: Display

Phone	Display Type	Dimensions	Colors	Backlight
snom720	Graphic	128 x 48 px	2 (1 bit)	
snom320	Text only	24 x 2 lines	2 (1 bit)	0004132CB937 
snom870	Graphic	480 x 272 px	True (24 bit)	
snom370	Graphic	240 x 128 px	Greyscale (5 bit)	
snom760/820 /821	Graphic	320 x 240 px	True (24 bit)	
snom360	Graphic	128 x 64 px	2 (1 bit)	
snom300	Text only	16 x 2 lines	2 (1 bit)	000413280000 

IP Phones: Text-Only Display



snom300

Configuration
Reg

Backlight from
000413280000

IP Phones: SIP Identities vs. F-Keys

Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
?	4	6	-

IP Phones: 4 SIP ID's, 6 F-Keys

Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-

IP Phones: SIP Identities vs. F-Keys



Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
?	12	12	-

IP Phones: 12 SIP ID's, 12 F-Keys

Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-

IP Phones: SIP Identities vs. F-Keys



Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
?	12	4	8

IP Phones: 12 SIP-IDs

4 F-Keys, 8 V-Keys



Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
snom820 snom821	12	4	8

IP Phones: 12 SIP-IDs

4 F-Keys, 8 V-Keys



IP Phones: SIP Identities vs. F-Keys



Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
snom820 snom821	12	4	8
?	12	-	15

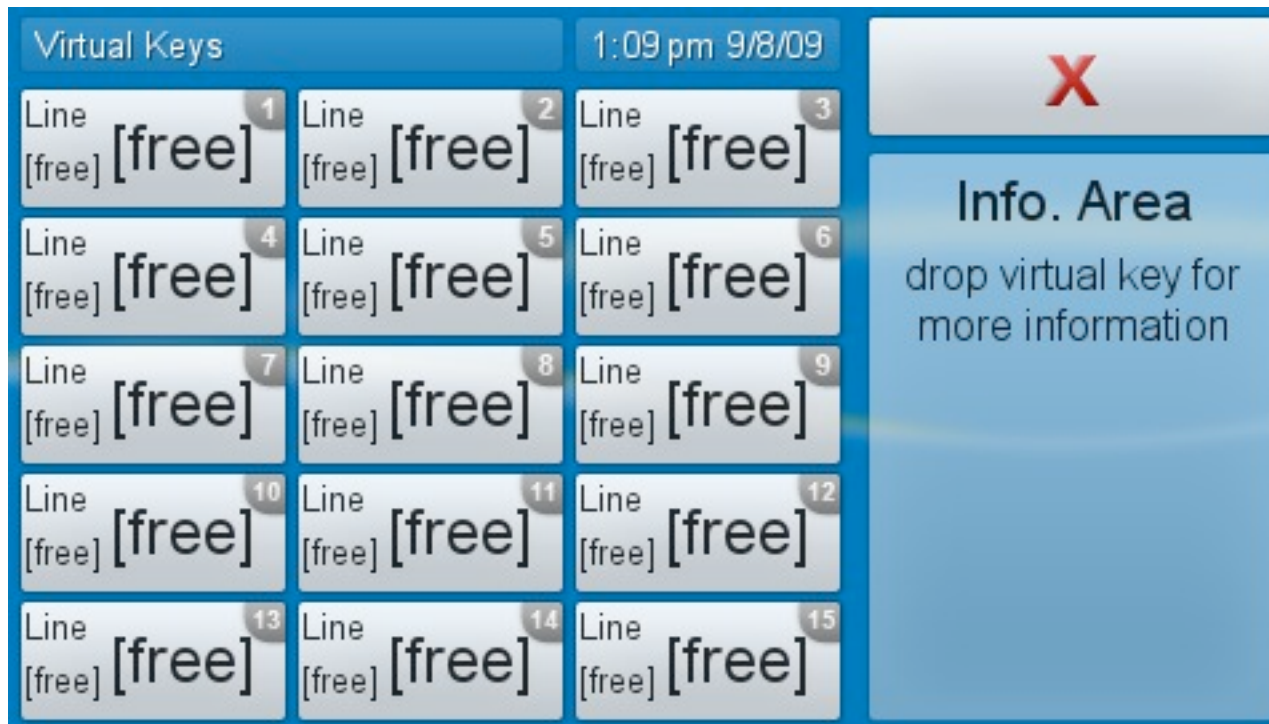
IP Phones: 12 SIP ID's

15 Virtual F-Keys

Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
snom820 snom821	12	4	8
snom870	12	-	15

IP Phones: 12 SIP ID's

15 Virtual F-Keys



IP Phones: SIP Identities vs. F-Keys



Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
snom820 snom821	12	4	8
snom870	12	-	15
?	12	18	-

IP Phones: 12 SIP ID's, 18 F-Keys

Phone Type	Identities	“Hard” F-Keys	Virtual F-Keys
snom300	4	6	-
snom320, 360, 370, 760	12	12	-
snom820 snom821	12	4	8
snom870	12	-	15
snom720	12	18	-

IP Phones: 12 SIP ID's, 18 F-Keys



IP Phones: CPU, Flash, and RAM

Phone Type	CPU	Flash	RAM
?	Infineon INCA-IP1	4 MB	16 MB

IP Phones: Infineon INCA-IP 1

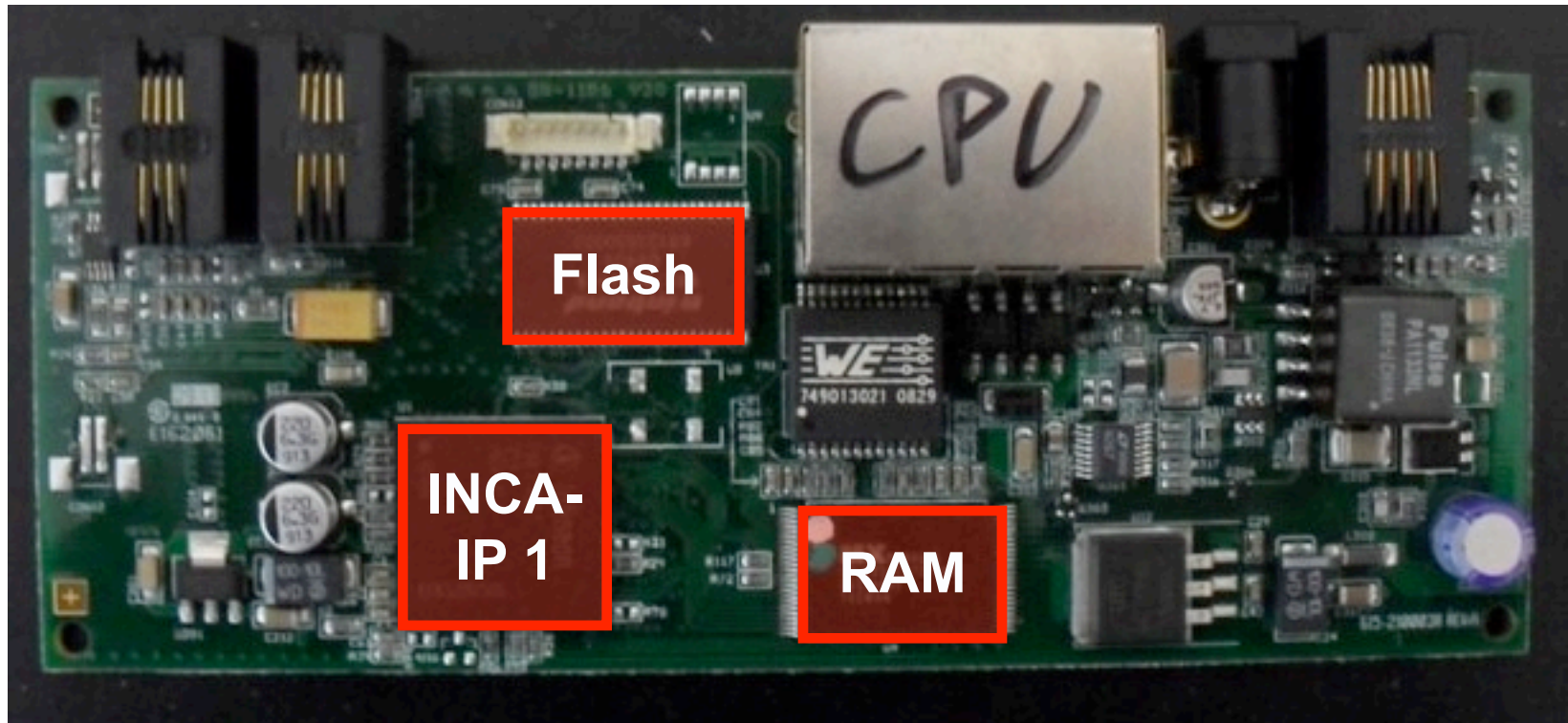
4 MByte Flash and 16 MByte RAM



Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB

IP Phones: Infineon INCA-IP 1

4 MByte Flash and 16 MByte RAM



IP Phones: CPU, Flash, and RAM

Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
?	Infineon INCA-IP2	64 MB	64 MB

IP Phones: Infineon INCA-IP 2

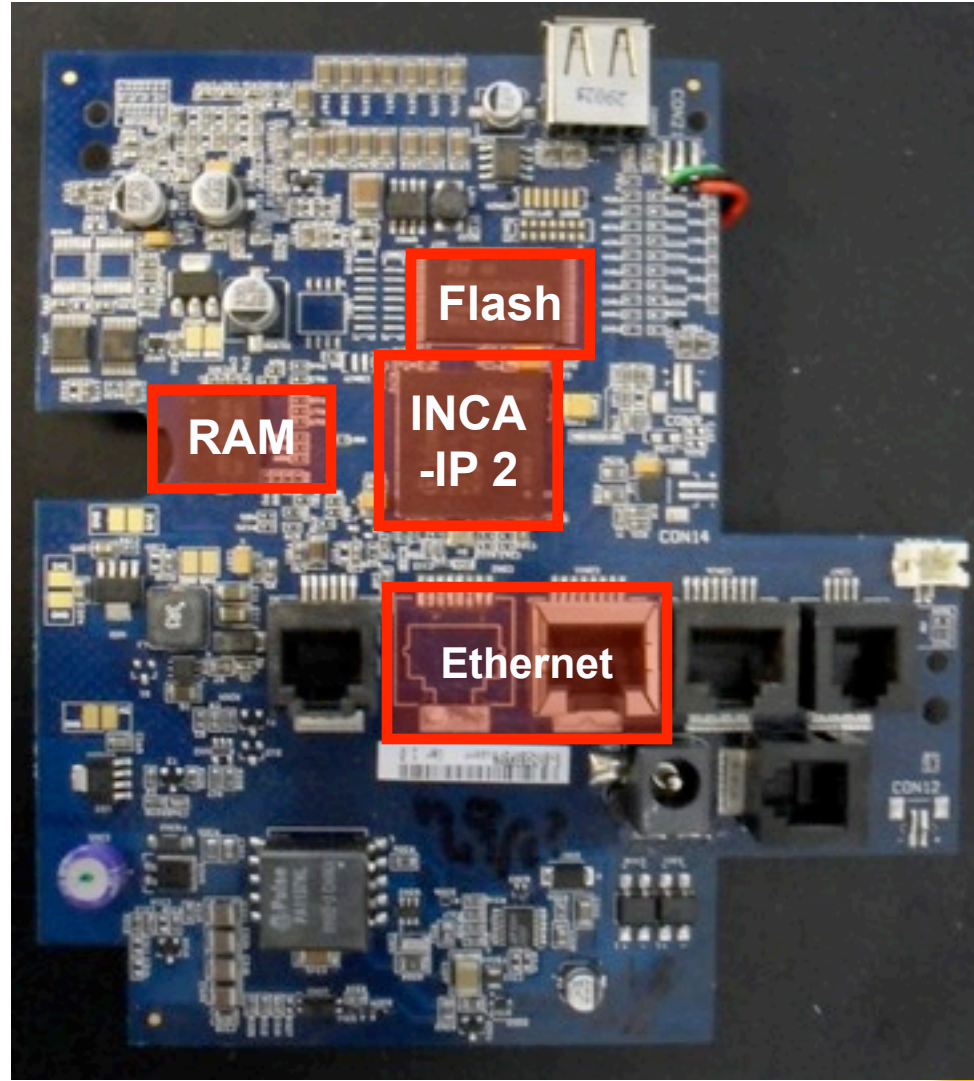
64 MByte Flash and RAM



Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB

IP Phones: Infineon INCA-IP 2

64 MByte Flash and RAM



IP Phones: CPU, Flash, and RAM

Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
?	Infineon INCA-IP1	8 MB	32 MB

IP Phones: Infineon INCA-IP 1

8 MByte Flash and 32 MByte RAM



Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB

IP Phones: CPU, Flash, and RAM

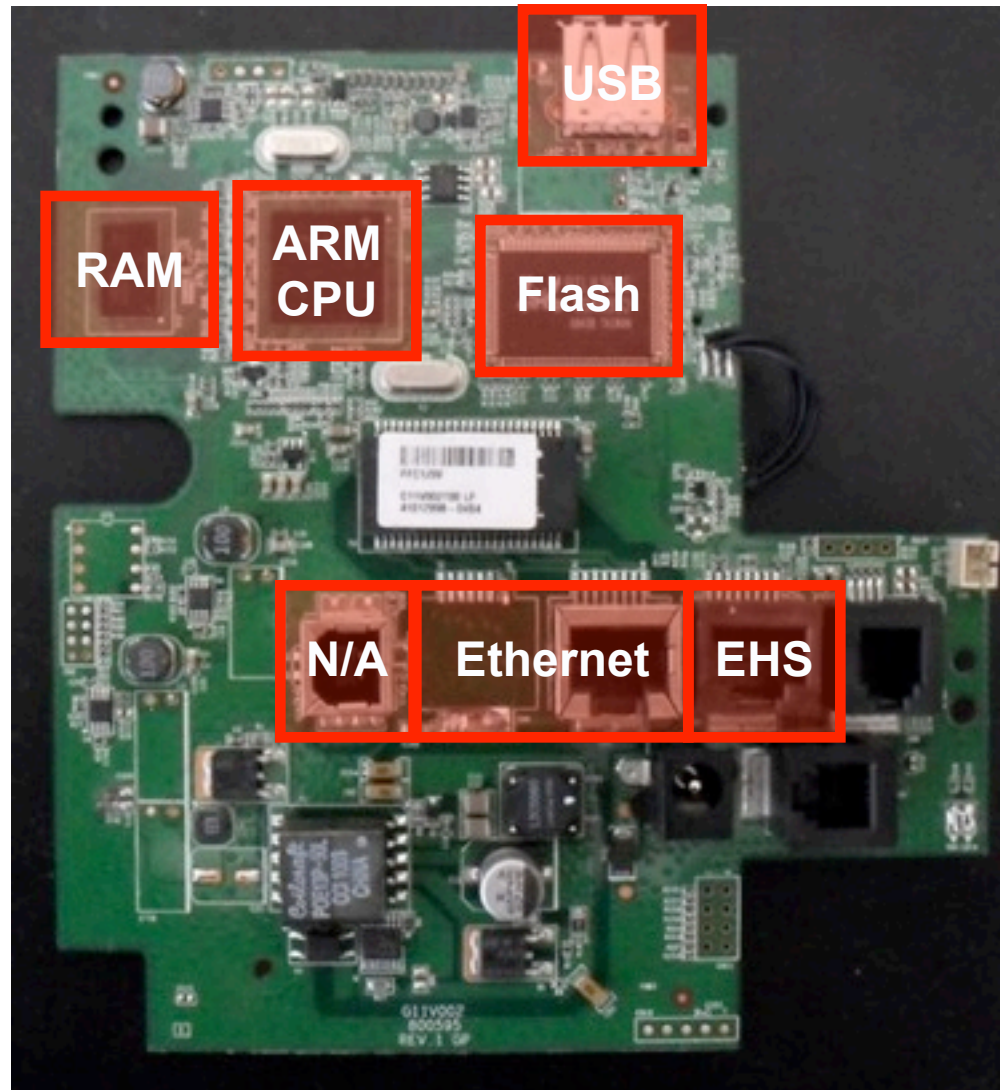
Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
?	STM ARM CPU	64 MB	64 MB

IP Phones: STMicroelectronics ARM CPU, 64 MByte Flash and RAM

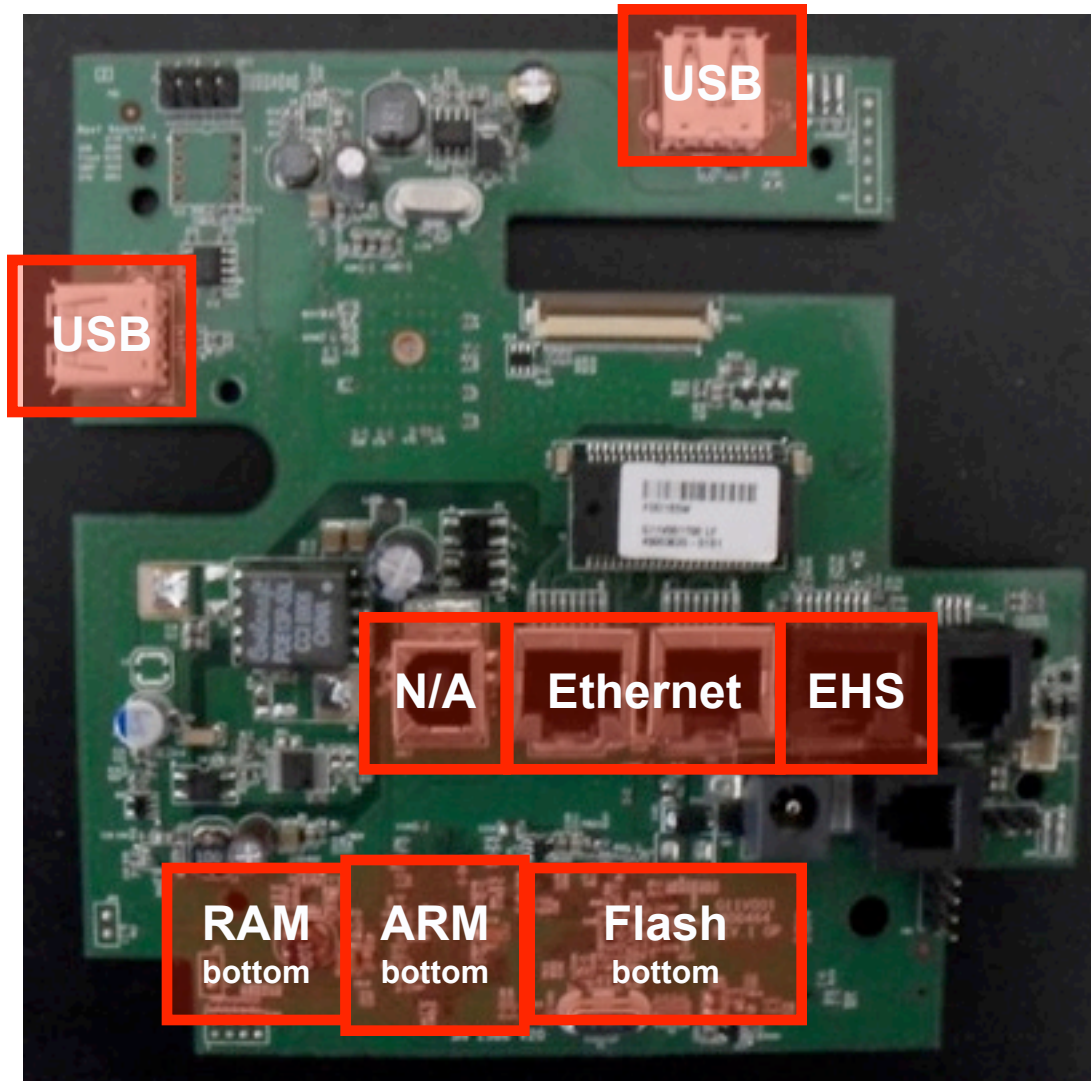


Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
snom821 snom870	STM ARM CPU	64 MB	64 MB

IP Phones: snom821 STM ARM CPU, 64MByte Flash and RAM



IP Phones: snom870 STM ARM CPU, 64MByte Flash and RAM



IP Phones: CPU, Flash, and RAM

Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
snom821 snom870	STM ARM CPU	64 MB	64 MB
?	TI ARM CPU	256 MB	256 MB

IP Phones: TI ARM CPU

256 MByte Flash and RAM

Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
snom821 snom870	STM ARM CPU	64 MB	64 MB
snom760	TI ARM CPU	256 MB	256 MB

IP Phones: CPU, Flash, and RAM



Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
snom821 snom870	STM ARM CPU	64 MB	64 MB
snom760	TI ARM CPU	256 MB	256 MB
?	TI ARM CPU	64 MB	128 MB

IP Phones: TI ARM CPU

64 MByte Flash and 128 MByte RAM



Phone Type	CPU	Flash	RAM
snom300, 320, 360	Infineon INCA-IP1	4 MB	16 MB
snom820	Infineon INCA-IP2	64 MB	64 MB
snom370	Infineon INCA-IP1	8 MB	32 MB
snom821 snom870	STM ARM CPU	64 MB	64 MB
snom760	TI ARM CPU	256 MB	256 MB
snom720	TI ARM CPU	64 MB	128 MB

IP Phones: Network Access

Phone Type	LAN/PC Port	PoE	WLAN
?	10/100 Mbps	yes	no
	10/100 Mbps	yes	yes
	1Gbps	yes	yes

IP Phones: 10/100 MBit Ethernet PoE (snom300!), no WLAN support



Phone Type	LAN/PC Port	PoE	WLAN
snom300, 320, 360, 370	10/100 Mbps	yes	no

IP Phones: Network Access

Phone Type	LAN/PC Port	PoE	WLAN
snom300, 320, 360, 370	10/100 Mbps	yes	no
?	10/100 Mbps	yes	yes

IP Phones: 10/100 MBit Ethernet, PoE, and WLAN support via USB



Phone Type	LAN/PC Port	PoE	WLAN
snom300, 320, 360, 370	10/100 Mbps	yes	no
snom820	10/100 Mbps	yes	yes

IP Phones: Network Access

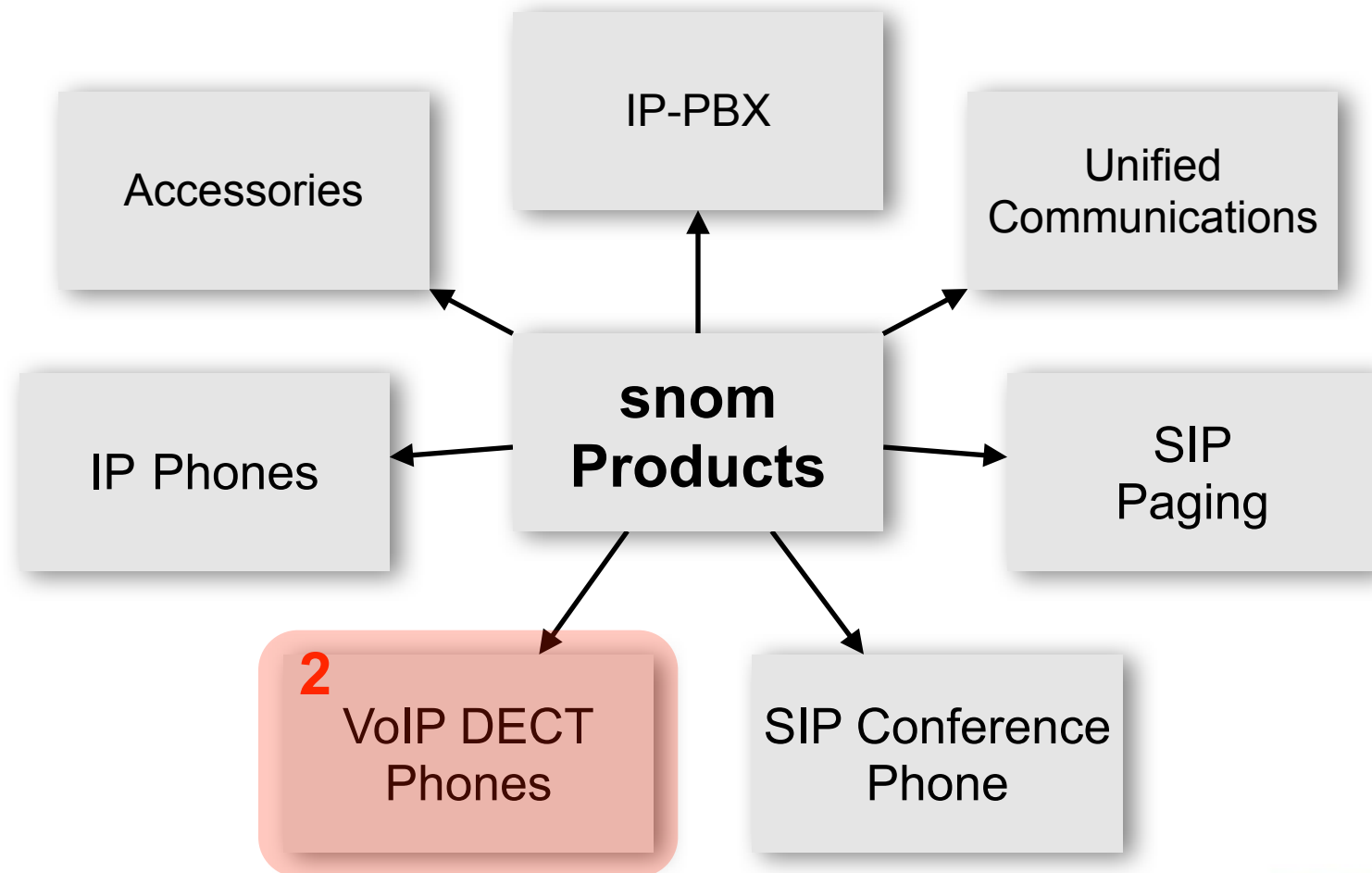
Phone Type	LAN/PC Port	PoE	WLAN
snom300, 320, 360, 370	10/100 Mbps	yes	no
snom820	10/100 Mbps	yes	yes
?	1Gbps	yes	yes

IP Phones: 1 GBit Ethernet, PoE, and WLAN support via USB



Phone Type	LAN/PC Port	PoE	WLAN
snom300, 320, 360, 370	10/100 Mbps	yes	no
snom820	10/100 Mbps	yes	yes
snom821, 870, 720, 760	1 Gbps	yes	yes

Introduction: VoIP DECT Phones



VoIP DECT Phones: Overview



snom m3

VoIP DECT
Phones



**DECT
Repeater
(m3)**



snom m9

VoIP DECT Phones: Overview



VoIP DECT phones:

What is DECT and why use it?



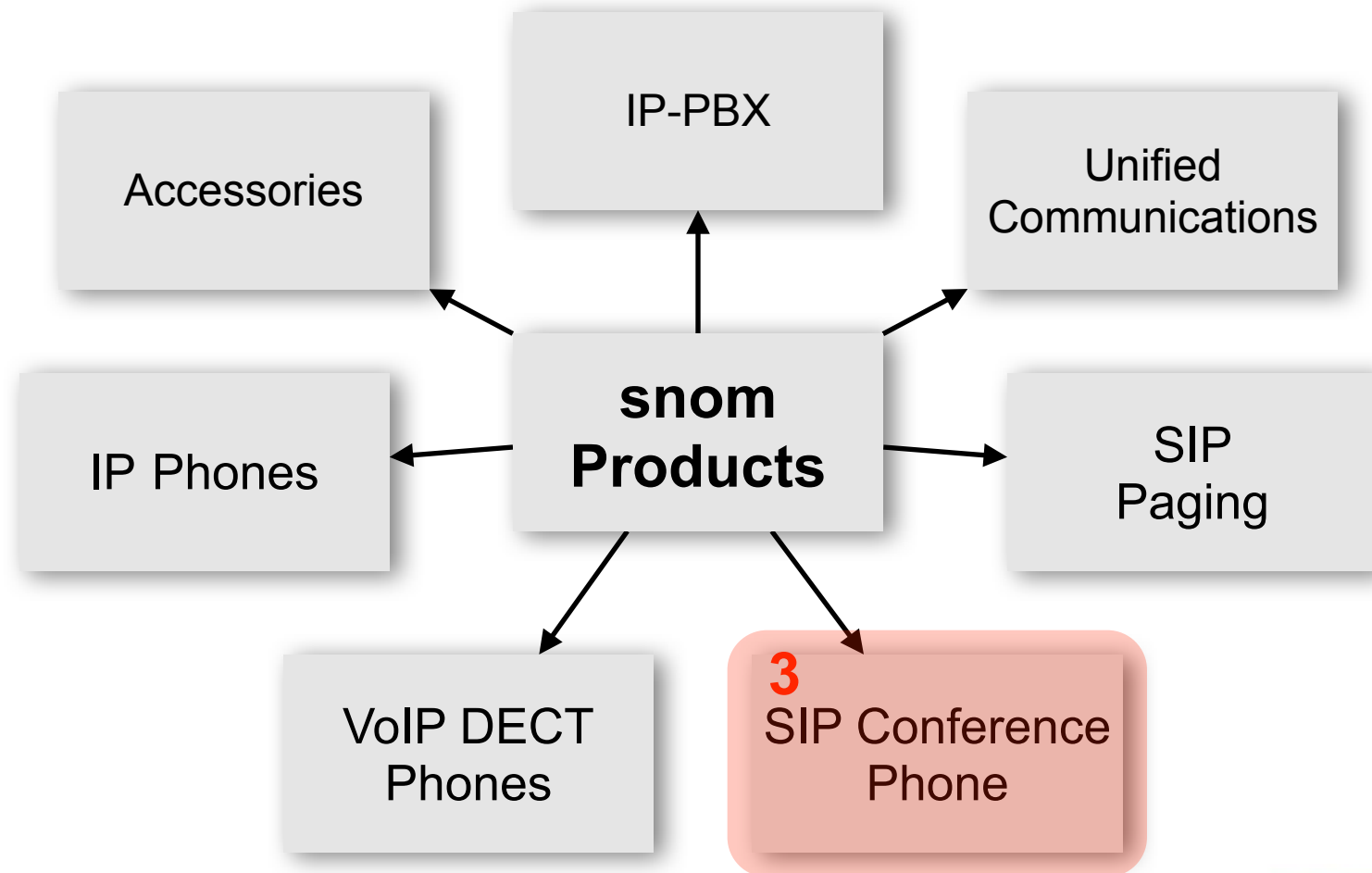
- ▶ **DECT (Digital Enhanced Cordless Telecommunications)** is a standard for short-range cordless communications for digital portable phones for residential, corporate and public environments
- ▶ **Key features:**
 - ▶ Reliable -high quality and secure -radio access
 - ▶ Signal robustness even in hostile radio environments
 - ▶ Speech transmission quality comparable to the wired telephony
 - ▶ Range up to 300 m
 - ▶ Interoperability through Generic Access Protocol (GAP)
 - ▶ Currently the dominant standard in cordless residential market as well as in enterprise PBX market

VoIP DECT phones:

snom m9 - Main Features



- ▶ **DECT standard (1.88-1.9 GHz), RFC 3261 compliance**
- ▶ **9 Handsets per access point, 4 concurrent VoIP calls**
- ▶ **Native IPv6, SIPS and SRTP support**
- ▶ **Automatic roaming & registration of handsets**
- ▶ **Auto Provisioning**
 - ▶ Auto configuration via HTTP/HTTPS
 - ▶ SIP Plug-and-Play (PnP)
 - ▶ TR-69/TR-111 Remote device management
 - ▶ Over-the-air Handset FW upgrade
- ▶ **Microsoft UC support**
- ▶ **Standard GAP profile ensures 3rd party equipment interworking**

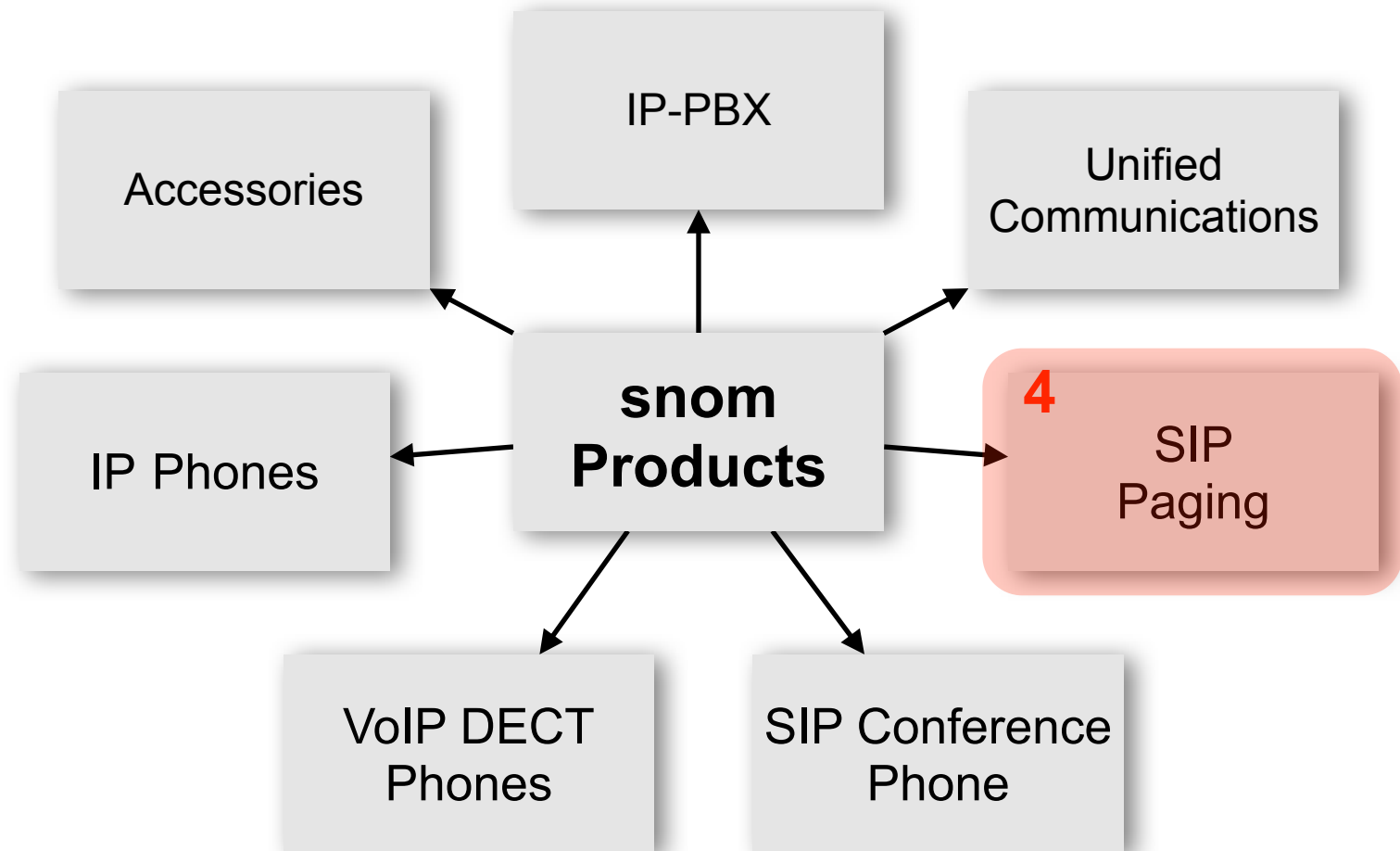


- ▶ **VoIP Conference Phone for up to 4 external participants**
- ▶ **Graphical display (1-bit), 12 SIP accounts (identities)**
- ▶ **SD Card Slot for call recording, etc.**



SIP Conference
Phone

Introduction: SIP Paging

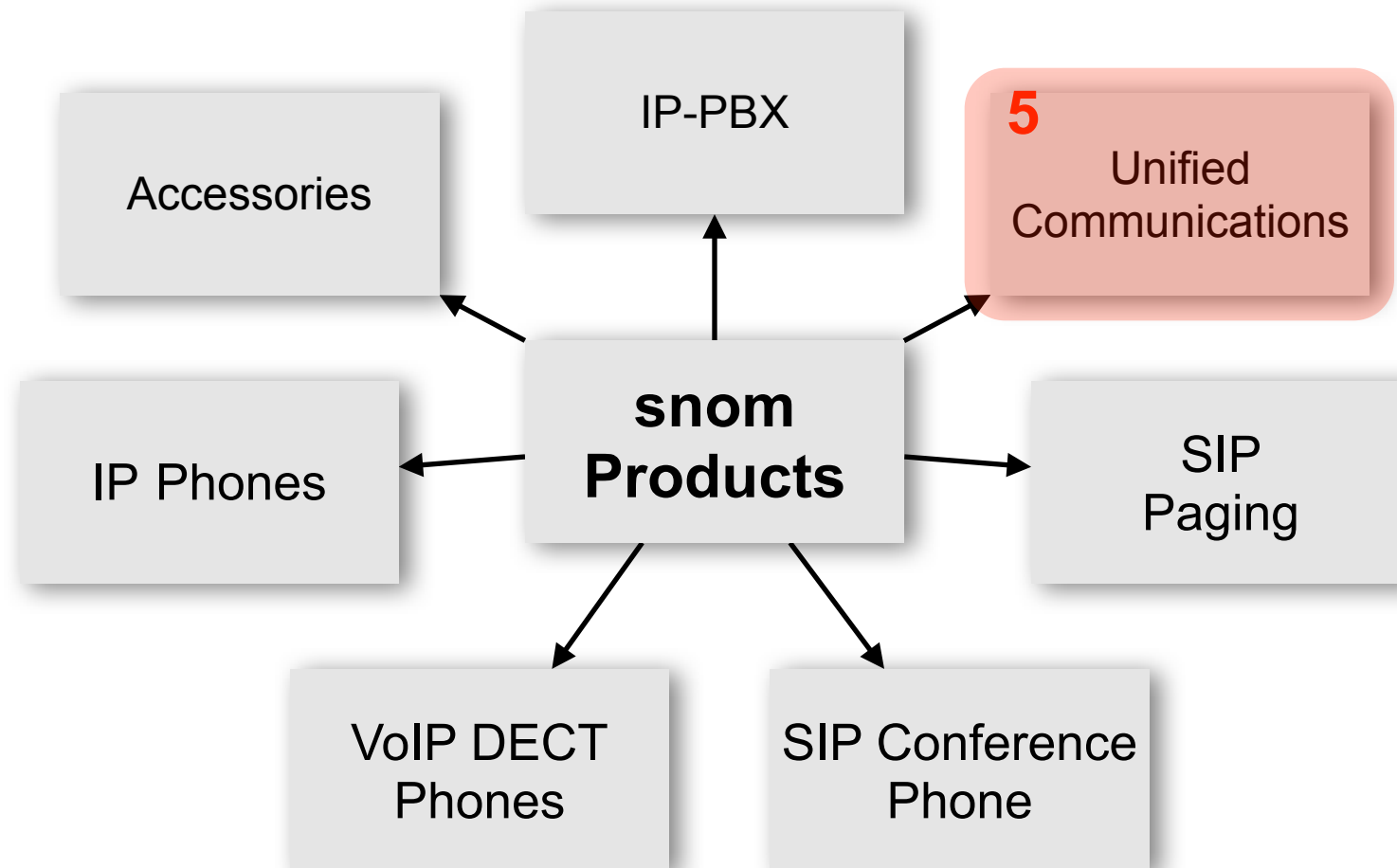


- ▶ SIP Paging System PA1 („Public Announcement“)
based on snom300
- ▶ 4 SIP accounts (identities) and up to 10 RTP
multicast sources
- ▶ Clamps for external loudspeaker and microphone
- ▶ 4 x DTMF controlled I/O ports



SIP
Paging

Unified Communication: snom UC Edition



What is the snom UC edition firmware?



- ▶ The snom UC Edition firmware is an optional software module for the snom 300 and snom 821, enabling them to connect directly and natively to Microsoft Office Communications Server 2007 R2 and Microsoft Lync.
- ▶ It combines the advantages of open standards-based IP telephony by using the SIP protocol to seamlessly integrate with Microsoft® Office Communications Server 2007 R2, Lync and any other SIP based IP PBX in parallel.

What are the main features of the snom UC edition firmware?



▶ All these features are available in all business scenarios: internal, remote and federated Enterprise Voice calls:

- ▶ snom UC edition phones can operate standalone to make and receive calls = work with or without a PC.
- ▶ Register up to four/ twelve OCS/Lync or standard SIP based accounts/lines on the same phone.
- ▶ Dual-SIP-stack provides soft migration into Lync or auto failover onto a SIP based switch/PBX.
- ▶ Supports auto provisioning via HTTP, HTTPS, and TFTP and remote management via TR-069
- ▶ Publishing of the device presence status, like “in a call, DND, etc”

Qualified snom UC Endpoints:

snom300 - Classic Device



- ▶ The snom 300 with snom UC firmware is the first open-SIP-based IP desktop phone to natively register to the Microsoft® Office Communications Server 2007 R2.
- ▶ It has the best cost-performance ratio compared to all other compatible devices for Microsoft® Lync Server 2010.

Unified
Communications



Qualified snom UC Endpoints: snom821 - Advanced Device



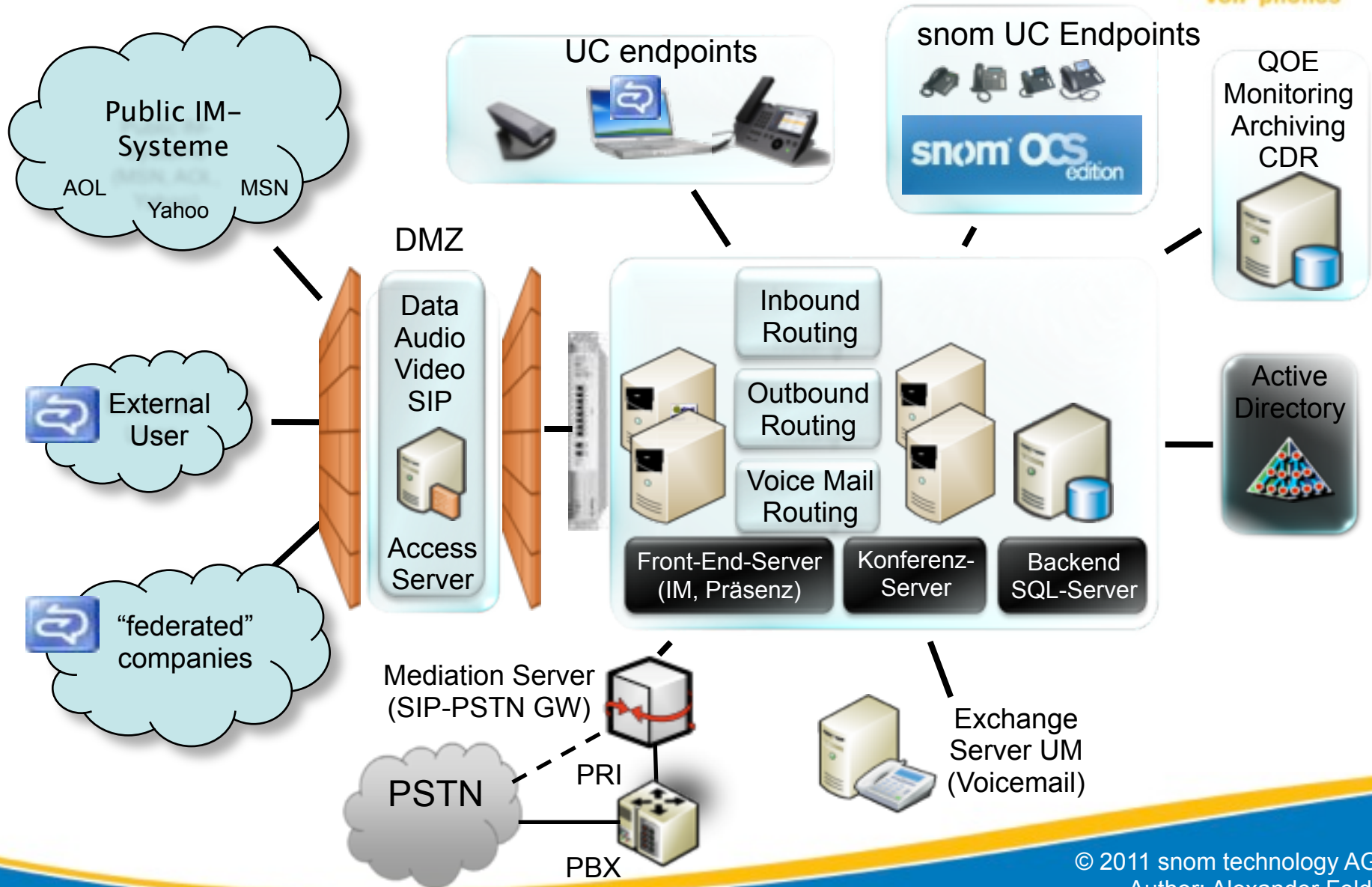
- ▶ **The snom 821 is the first qualified device on Microsoft®'s UC platform with extended feature support including a dual SIP stack and color screen:**

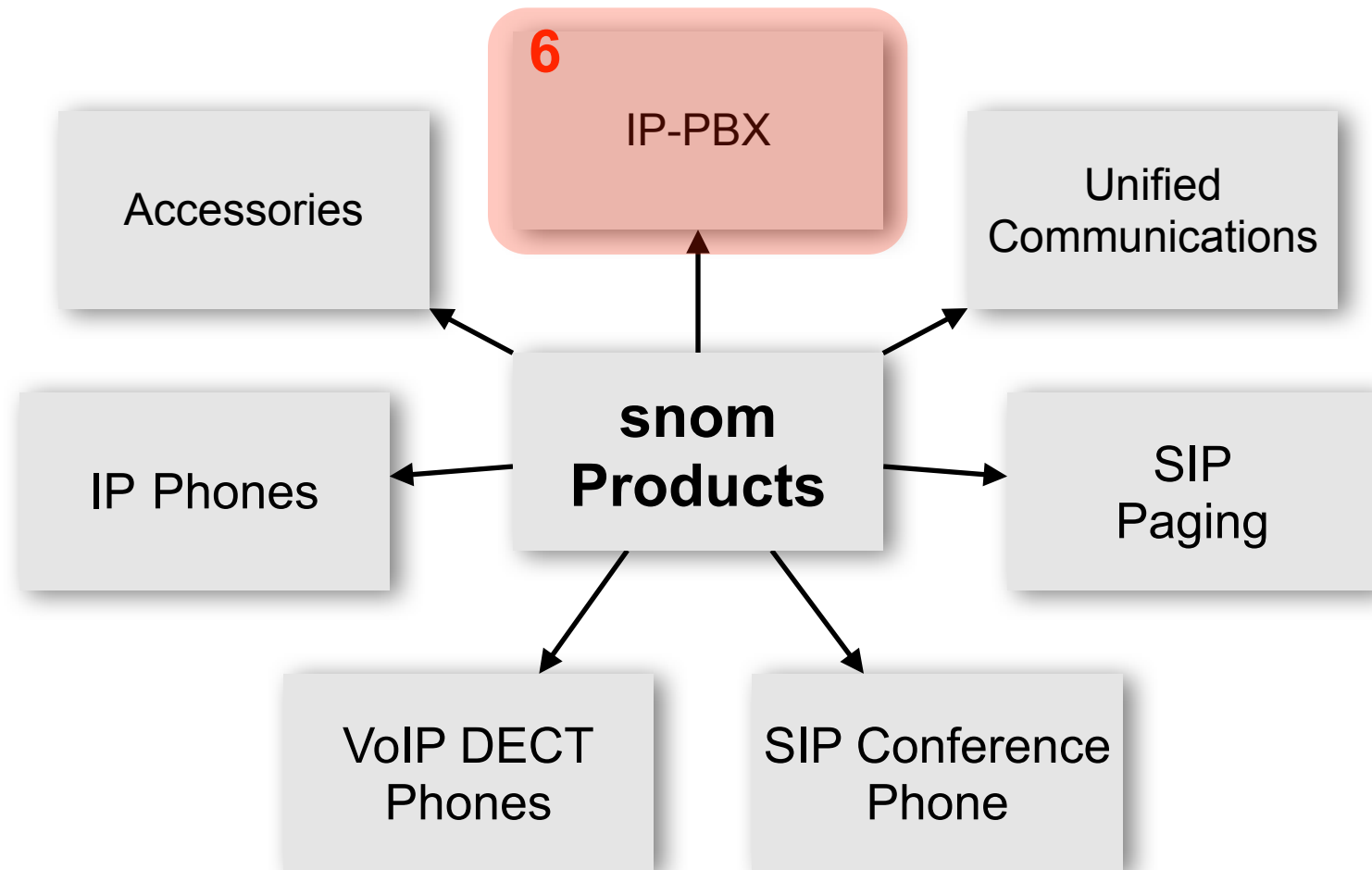
- ▶ Server side address book search with integrated presence
- ▶ Presence integrated in call history, contact list and search results
- ▶ Advanced security on server side, controlled keyboard lock
- ▶ Mapping of your favourite contacts on 3 colour buttons (with instant presence view)

Unified
Communications



Components of an UC Infrastructure





IP-PBX Software:

snom ONE free, yellow, blue



**snom ONE
yellow**



**snom ONE
free**



**snom ONE
blue**

IP-PBX Hardware: snom ONE plus

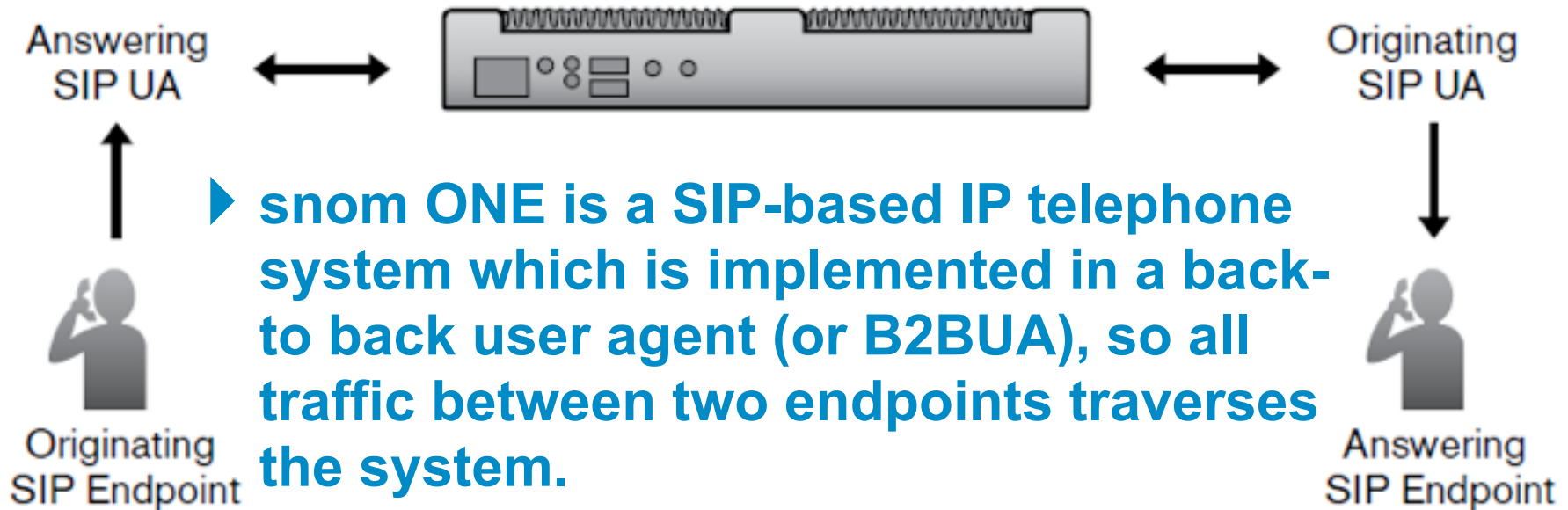


▶ snom ONE plus is available in two versions:

- ▶ snom ONE plus blue (up to 150 extensions, full feature set)
- ▶ snom ONE plus yellow (up to 20 extensions, full feature set)



snom ONE: About



- ▶ **snom ONE is a SIP-based IP telephone system which is implemented in a back-to back user agent (or B2BUA), so all traffic between two endpoints traverses the system.**

- ▶ **Note: This gives the system complete control of the call state and allows it to participate in all call requests. It also allows it to perform a number of functions that are impossible using the SIP proxy model.**

- ▶ **Available for Windows, Linux and Mac OS, full feature set with all versions**
- ▶ **Configuration Features: Plug and Play with all snom phones, secure provisioning via https**
- ▶ **Call Features:**
 - ▶ Conference rooms, Music On Hold (MoH)
 - ▶ Auto attendants, Hunt groups, Queues (Agent Groups)
 - ▶ Voicemail, Paging via multicast, Call Recording (using snom's Record- Key)
 - ▶ Call forking (Simultaneous ringing of cell phones and snom phones)
 - ▶ Call Barge, Listen-In, Whisper (Teach- Mode)

▶ **Presence Features:**

- ▶ BLF using “Buttons”, Shared Line emulation

▶ **Directory Features:**

- ▶ Centralized Address Book via XML

▶ **Mobility Features:**

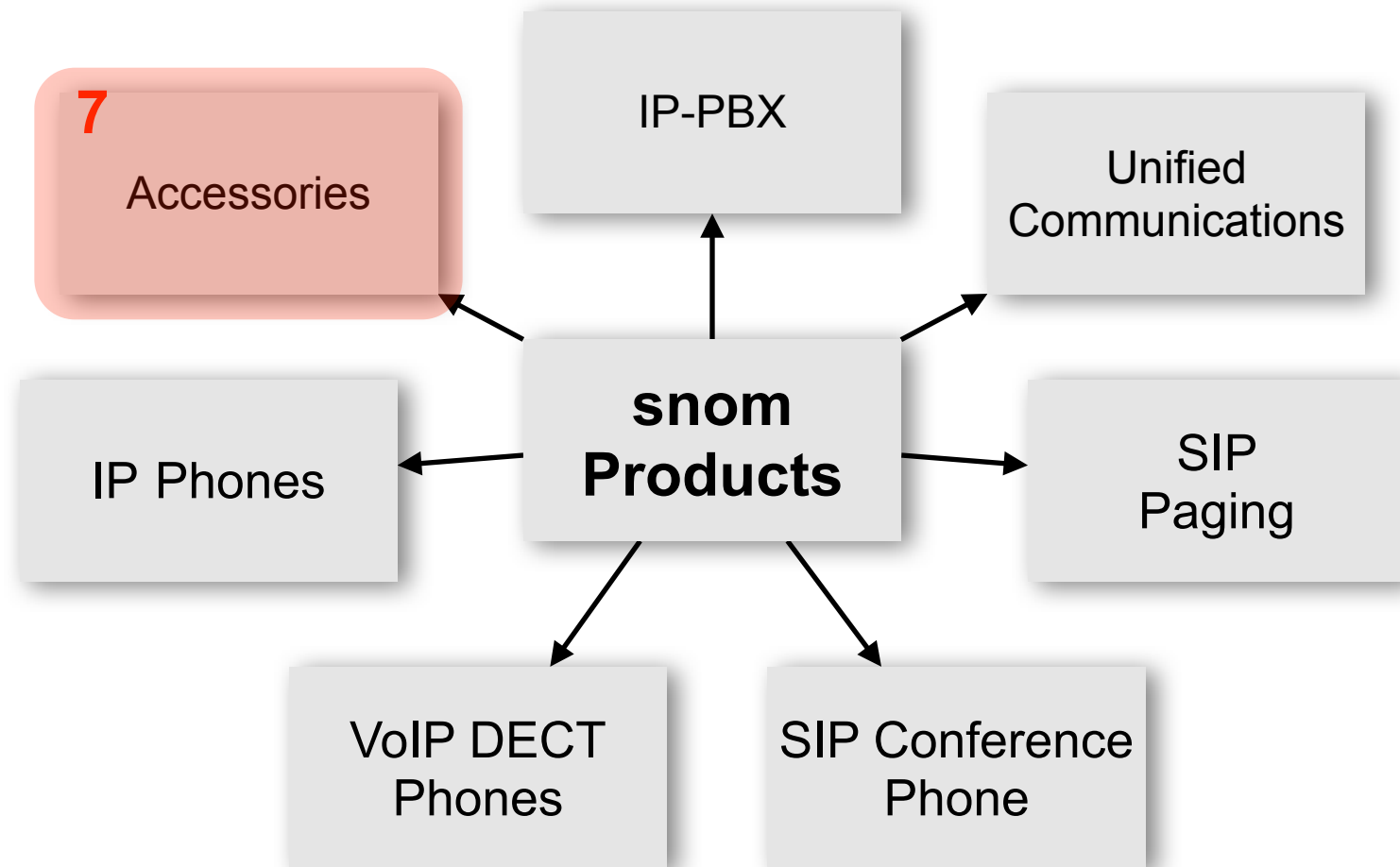
- ▶ Hot desking

▶ **Security Features:**

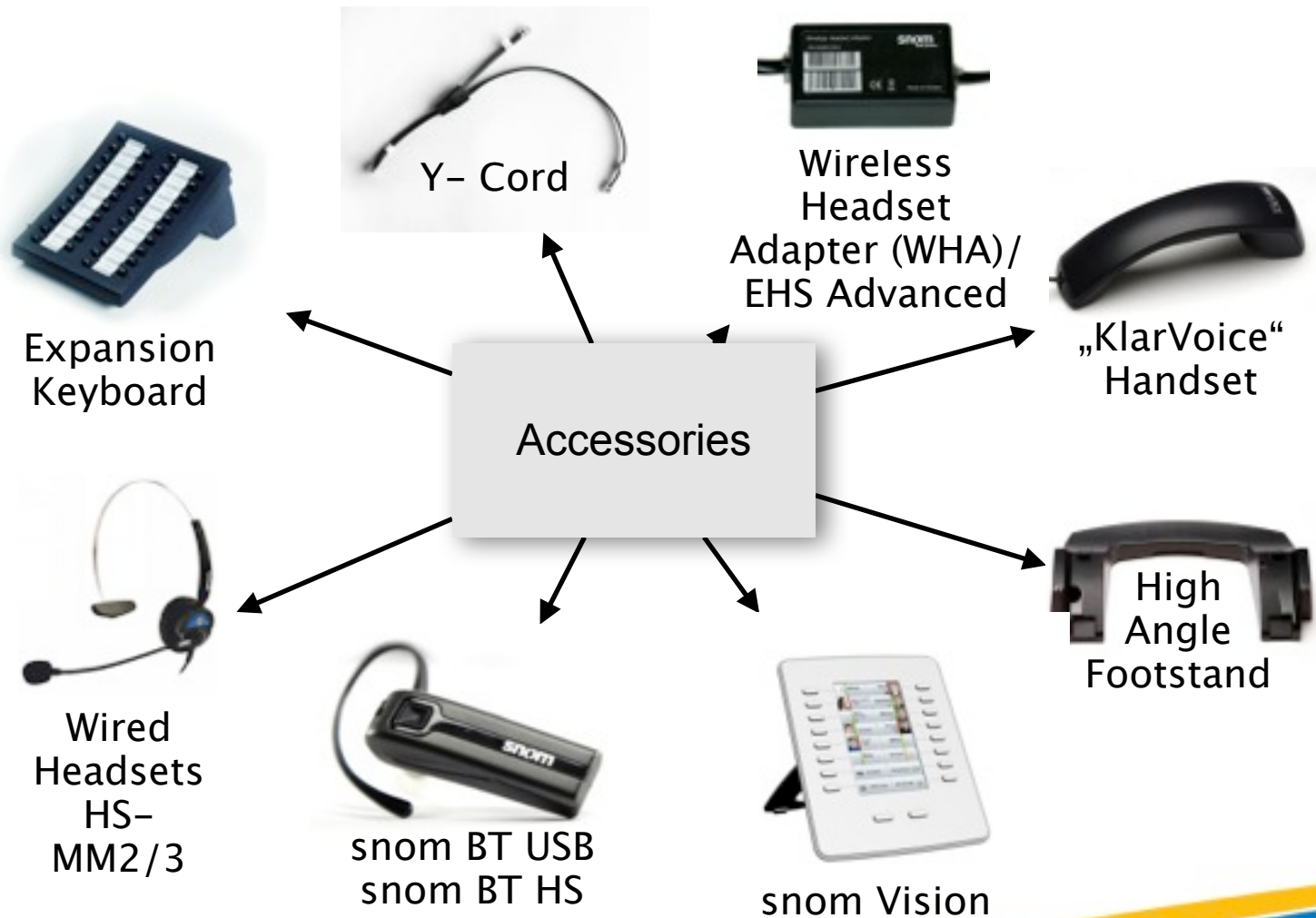
- ▶ SIP over TLS & SRTP

▶ **Interoperability Features:**

- ▶ Session Border Controller (SBC)



Accessories: Overview



IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
?	HSS-M3							

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
?	HSS-M2							

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
snom320/ 360/370	HSS-M2							

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
snom320/360/370	HSS-M2							
?	HSS-M2					included		

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
snom320/360/370	HSS-M2							
snom8xx	HSS-M2					included		

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
snom320/360/370	HSS-M2							
snom8xx	HSS-M2					included		
?	HSS-M2					included		

IP Phones: Accessories

Phone Type	Wired Head-set	Expansion Module		snom WHA	YCord	Klar-voice Hand set	High Angle Foot-stand	snom BT USB/ HS
		V2.0	snom Vision					
snom300	HSS-M3							
snom320/360/370	HSS-M2							
snom8xx	HSS-M2					included		
snom7xx	HSS-M2					included		

- ▶ Thank you for attending this introduction course “ST110: Product Overview”. We hope you enjoyed it.