TANDBERG Software History

TANDBERG

D12565, rev. 08

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Introduction

This document is intended to provide an overview over the various software versions and products from TANDBERG. Each TANDBERG software release is named with a letter to describe and categorize the various software/hardware groups then followed by the main software version number with the software patch number as an extension (e.g. C3.2 which is a software for the C hardware group 3rd release patch number 2).

Each software version is briefly described with features and helpful comments in a table format. The various software versions are highlighted differently according to the nature of the software revision.

e.g.

B3.0
July 2001   Entirely new software platform, with functionality upgrade – provided free of charge when system covered by a service contract.

B2.4
May 2001   'dot' revision with minor changes to improve functions or cases, sometimes including limited new functionality (maybe only one special feature like a requested ISDN protocol etc) – covered warranty and normally free of charge if you have a software version which has the same main number, e.g. B2.x

Quick Software History

Short historical summary of the various products and software:

Products	Software history
Vision 600/ Vision 770/ Vision 1000	A1, B1 ➡ B1.3
MasterVision 2000/ MasterVision 6000i/ Vision 2000 etc[1]	A1 ➡ A2.2, B1 (SoftMux) ➡ B4.3
Vision 800	C2 ➡ C4
Vision 2500	C3 ➡ C4
Vision 5000	C1 ➡ C4
Vision 6000 (Renamed TANDBERG 6000 with A2)	A1
Vision 7000 (Codec 6000)	A1
TANDBERG 500	B1 ➡ B7.3
TANDBERG 550	B4 ➡ B5.11 ➡ E2.3
TANDBERG 800	A2, B1 ➡ B7.3
TANDBERG 880	B4 ➡ B5.11 ➡ E2.3
TANDBERG 880 IP Only	E1.3 ➡ E2.3
TANDBERG 880 Net	B4.4 ➡ B5.11 ➡ E2.3
TANDBERG 1000	B2 ➡ B5.1/B5.11 ➡ B7.3[2]/E2.3[3]
TANDBERG 2500	A2 ➡ A2.5 ➡ B5.1/B5.11 ➡ B7.3[2]/E2.3[2]
TANDBERG 6000(Codec 6000)	A1 ➡ A2.5 ➡ B5.1/B5.11 ➡ B7.3[2]/E2.3[2]
TANDBERG 7000 (Codec 6000)	A1 ➡ A2.5➡ B5.1 ➡ B7.3[2]/E2.3[2]
TANDBERG 8000 (Codec 6000)	B3.3 ➡ B7.3[2]/E2.3[2]
TANDBERG MCU	D1 ➡ D3
TANDBERG GW	G1 ➡G2

Notes:

- Many new software features will be/is implemented on the next software version regardless of product (e.g. Intelligent Video Management (IVM) was first implemented on V600/770/1000, but is now implemented in the whole range)
- In general: each new software upgrade has been improved from the last particularly regarding video handling and network handling.
- Note that the former products Vision Classic, the Grand Vision and the Compact Vision are not included in this document.

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[1] V2000: modification with the power strap to pin number 4 on dataport 2 (to provide power to the camera) was done between A2.0 and B1.0 sw.

[2] B7, B6 and B5.1 require non-enhanced codecs TANDBERG 8000/7000/6000/2500/1000/800/500 (see Appendix "Prefixes on TANDBERG products")

[3] E2, E1 and B5.11 require enhanced codecs: T8000, T6000, T2500, T880, T550 and T1000 (see Appendix "Prefixes on TANDBERG products")

Overview on the latest software versions: E2.3 and B7.3

The following tables are given as a summary on the software versions to be used depending on the TANDBERG systems.

E2.3[3]	ISDN	128 Kbps	N/A	384 Kbps	N/A	768 Kbps	2 Mbps*
	IP	384 Kbps	384 Kbps	768 Kbps	768 Kbps	3 Mbps**	3 Mbps**
TANDBERG 880 IP only	PAL	N/A	N/A	N/A	S08601	N/A	N/A
TANDBERG 1000	PAL	S08501	N/A	S08301	N/A	N/A	N/A
TANDBERG 550	PAL	S08501	N/A	S08301	N/A	N/A	N/A
TANDBERG 880	PAL	N/A	N/A	S08301	N/A	N/A	N/A
TANDBERG 2500	PAL	N/A	N/A	S08301	N/A	N/A	N/A
TANDBERG 6000	PAL	N/A	N/A	N/A	N/A	S08101	S08001
TANDBERG 8000	PAL	N/A	N/A	N/A	N/A	N/A	S08001
TANDBERG 880 IP only	NTSC	N/A	N/A	N/A	S08604	N/A	N/A
TANDBERG 1000	NTSC	S08504	N/A	S08304	N/A	N/A	N/A
TANDBERG 550	NTSC	S08504	N/A	S08304	N/A	N/A	N/A
TANDBERG 880	NTSC	N/A	N/A	S08304	N/A	N/A	N/A
TANDBERG 2500	NTSC	N/A	N/A	S08304	N/A	N/A	N/A
TANDBERG 6000	NTSC	N/A		N/A	N/A	S08104	S08004
TANDBERG 8000	NTSC	N/A		N/A		N/A	S08004

* Only available using ISDN PRI, or External networks interface. (Maximum bandwidth available 768 Kbps using ISDN BRI)
** Maximum bandwidth available using IP in point to point: 3 Mbps. (Maximum bandwidth available in Multisite: 2 Mbps)

B7.3[2]	ISDN	128 Kbps	384 Kbps	768 Kbps	2 Mbps*
	IP	384 Kbps	768 Kbps	3 Mbps**	3 Mbps**
TANDBERG 1000	PAL	S07501	S07301	N/A	N/A
TANDBERG 500	PAL	S07501	S07301	N/A	N/A
TANDBERG 800	PAL	N/A	S07301	N/A	N/A
TANDBERG 2500	PAL	N/A	S07301	N/A	N/A
TANDBERG 6000	PAL	N/A	N/A	S07101	S07001
TANDBERG 7000	PAL	N/A	N/A	N/A	S07001
TANDBERG 8000	PAL	N/A	N/A	N/A	S07001
TANDBERG 1000	NTSC	S07504	S07304	N/A	N/A
TANDBERG 500	NTSC	S07504	S07304	N/A	N/A
TANDBERG 800	NTSC	N/A	S07304	N/A	N/A
TANDBERG 2500	NTSC	N/A	S07304	N/A	N/A
TANDBERG 6000	NTSC	N/A	N/A	S07104	S07004
TANDBERG 7000	NTSC	N/A	N/A	N/A	S07004
TANDBERG 8000	NTSC	N/A	N/A	N/A	S07004

* Only available using ISDN PRI, or External networks interface. (Maximum bandwidth available 768 Kbps using ISDN BRI)
** Maximum bandwidth available using IP in point to point: 3 Mbps. (Maximum bandwidth available in Multisite: 2 Mbps)
The above softwares can be found and downloaded from: ftp://prix.tandberg.no/pub/ or http://ftp.tandberg.no/pub/

TANDBERG MCU

SW VERSION & DATE	FEATURES	COMMENTS

D3.0
 	
Oct. 2003
	H.320
	• **Parallel dial in on ISDN** (already supported on IP)
	  Parallel dial in to the same conference on ISDN. (requires that a PRI range is configured).
	  Number of possible parallel incoming ISDN calls => (numbers in the PRI range) – (number of conference dial in numbers).
	  EXAMPLE:
	  – PRI range: 67117701-67117710 => 10 numbers
	  – One number per conference => 3 dial in numbers
	  – (10-3) = 7 parallel incoming calls are supported.
	• **PRI range and Hunt Groups**
	
	H.323
	• **Improved "on screen" indicators** in IP calls (as supported in E2 endpoints and GW):
	  – Site Naming
	  – Mic Off indication
	  – On Air indication
	
	MCU
	• **Improved distributed MCU**
	  Two level distributed MCU: one Master MCU, up to 16 slave MCU's.
	  – Up to 240 participants @ 384 kbps (ISDN and IP calls).
	  – Automatic Master/Slave negotiation
	  Functions supported for all participants:
	  – Request Floor: displays yourself in full screen for all participants
	  – Site Naming: view the site names of all participants in the conference.
	  – Automatic Voice Switched on Slave MCU.
	  Administrator features (on MCU or TMS):
	  – View site names (terminal list) of all participants.
	  – Configure the conference as Master, Slave or Auto:
	    - Auto – The MCU dialing out will become Master
	    - Master/Slave status on Web.
	  – Picture Mode disabled on Slave MCU.
	  – Assign Floor from Master MCU: shows the site in full screen for all participants.
	  – Assign Floor from Slave MCU: shows the site in full screen for all participants (only to sites on this MCU)
	• **Improved Picture Mode:**
	  - Auto Best Impression^{TF}(NEW): Automatic Voice Switched Layout Switching / Lecture mode
	    – 1 to 2 participants: Full Screen Voice Switched mode
	    – 3 to 6 participants: Continuous Presence 5+1
	    – 7 to16 participants: Continuous Presence 7+1
	    – Activate with Picture Mode: Enhanced CP.
	  - Voice switched,
	  - Enhanced CP (NEW):	

SW VERSION & DATE	FEATURES	COMMENTS
	Continuous Presence 5+1: lecture mode for 3 to 6 participants - One large and 5 small pictures - More than 6 participants, the last 6 speakers will be shown - 'Floor to Full Screen' option for the 5+1 and 7+1 layouts **Continuous Presence 7+1**: lecture mode for 7 to 16 participants - One large and 7 small pictures - More than 8 participants, the last 8 speakers will be shown - 'Floor to Full Screen' option for the 5+1 and 7+1 layouts - **Traditional CP** (CP, CP4, CP9, CP16), - **CP4** (with Voice Switched mode) • **Enhanced Video Transcoding** • **Duo Video / People + Content support** can be enabled/disabled per conference. • **Dial in/out at 56/64 kbps + video at these rates** **VIDEO** • **H.264 (supported on ISDN and IP calls)** – Up to 768 kbps, 30 fps, CIF – Supported in CP4 and Voice Switched mode only – Global enable/disable setting • **Automatic switch to H.263 if:** – Not supported by conference participants. – More than one conference session (not supported with multi conferences). – Using other layouts than Voice Switched and CP4 mode. **AUDIO** • **G.722.1 (24 kbps/32 kbps) in IP calls** (same as in E2, software for TANDBERG codecs)**:** – From 64 to192 kbps: G.722.1 -> G.728 -> G.722 -> G.711 – Above 192 kbps: G.722->G.722.1->G.728->G.711 **Ensure high quality audio at lower bandwidths**: – Disable G.728 per conference – will force G.722 instead of G.728 on lower bandwidths: 16xG.728 sites + 16 telephones (previous limitation of 7 G.728 sites removed) • **Outgoing H.323 audio only calls will count as audio sites**. – Incoming H.323 audio only calls depends on signaling from the calling site. • **MCU Capacity:** 16 video sites + 16 telephones / 16 H.323 (G.711) audio only calls (before: 16 video sites + 16 telephones!) **MANAGEMENT** • SNMP trap when wrong password entered	
D2.3 *Mar. 2003*	**H.320** • Incoming calls without the "Called Number" ISDN information element will be routed to Conference 1. • Enhancement for handling VIS (Video Indicate Suppressed) messages. D2.3 will not disconnect after receiving this message. **H.323**	• Support for Polycom Enterprise People+Content on ISDN (both ways) • NEBS Approval: The TANDBERG MCU has

SW VERSION & DATE	FEATURES	COMMENTS

	• "#" allowed when dialing IP Aliases
	
	VIDEO
	  Improved People + Content Support
	• Support added for Enterprise People+Content on ISDN (the IPower and/or Viewstation FX endpoint must connect via ISDN to the MCU)
	• Transmit and Receive is now allowed (requires FX ver. 5.0/ IPower ver. 5.0)
	• D2.3 will pass CIF, 4CIF, VGA, SVGA, and XGA as the duo source if possible. (People + Content is OFF by default)
	
	MANAGEMENT
	  UDP Checksum on/off
	• This is used to alleviate some issues encountered with FVC equipment.
	• Data port command is: udpcheck <on/off>
	  - When UDP Checksum is on (default), D2.3 will discard packets, which fail the checksum.
	  - When UDP Checksum off, D2.3 will not discard these packets..
	
	  HLC
	• Some systems do not like to see HLC in the setup messages. So for compatibility in these rare instances, we allow for this to be disabled.
	• Data port command is: isdnprot hlc <on/off>
	  - on: send HLC
	  - off: do not send HLC (default)
	
	  ISDN Alert on all Channels
	• Some ISDN switches require ALERT messages for all channels on incoming calls. This command will send alerts on all channels instead of the first channel as we do by default.
	• Data port command is: isdnprot alert <on/off>
	  - on: we will send ALERT for all channels
	  - off: send ALERT for the first channel only (default)
	
	  Legacy Mode
	• To accommodate older video systems that may have trouble with our modern capabilities, a legacy mode has been added.
	• There is now an on/off setting in the web page which turns the "Legacy Mode" on/off. (default is off)
	• Along with the webpage setting, there are two corresponding data port commands as follows:
	  - conftemplate legacylevel <0..15>
	  - confsettings legacylevel <CONFERENCE ID 1..3> <0..15>
	        0 - No capabilities removed. This is default.
	        1-15 - The following capabilities are removed:
	        MSC_RESTRICT_CAP
	        MSC_RESTRICT_P
	        MSC_NORESTRICT
	        DTACHAN_H224HDLC
	        MSC_DUALMON
	        VIDSTD_H263
		now been approved as a NEBS Level 3 Carrier Class bridge.

SW VERSION & DATE	FEATURES	COMMENTS
	VIDSTD_H263PP AUDCSTD_G728 AUDCSTD_G722_1_24 AUDCSTD_G722_1_32 DTA_HSD MSC_H263_2000 MSC_MVC MSC_NSCAP MSC_TANDBERG MSC_ENCRYP MSC_DUOPLUS *Note: Values 1-15 all behave exactly the same, the extra values are reserved for potential use in future releases. **USER INTERFACE** • Line feed handling improvement. Does not require CTRL-Enter for line feed in Windows XP telnet sessions.	

D2.1
 	
Jan. 2003
	H.323
	  IP CONFERENCES
	• Register to Gatekeeper with one E.164 Alias per conference
	• Dial in to different conferences using IP Number (E.164 Alias):
	  Conference 1 using the MCU IP-address or E.164 Alias
	  Conference 2 & 3 using the E.164 Alias.Dial out to endpoints using IP Number (E.164 Alias) or IP Address
	• Intelligent Packet Loss Recovery (IPLR[TF])RSVP – Guaranteed bandwidth in IP calls (requires support by routers and endpoints)
	• Quality of Service:Diffserv (audio, video, data, signaling)
	        IP Precedence (audio, video, data signaling)
	        TOS (Type of Service)
	• Request Floor support in IP conferences
	• Multiple SNMP trap hosts
	
	MCU
	  MIXED ISDN/IP CONFERENCES: connect up to:
	  - 16 video sites ISDN/IP + 16 telephones ISDN/IP (16+16 version)
	  - 8 video sites ISDN/IP + 8 telephones ISDN/IP (8+8 version),
	
	  MULTIPLE SIMULTANEOUS CONFERENCES
	• Maximum 3 Simultaneous Conferences per MCU (All conferences can use all TANDBERG features at the same time).
	  Examples: Max. 6 Simultaneous Conferences on 2 MCUs, Max. 9 Simultaneous Conferences on 3 MCUs
	• A mix of un-encrypted and encrypted conferences is possible.
	• Max capacity per conference can be reserved.
	
	SECURITY:
	  ENHANCED SECURE CONFERENCE[TF] (Encryption)
		Support for IP conferences
		
		Support for multiple simultaneous conferences
		
		Support for AES on IP/ISDN
		
		XGA support

SW VERSION & DATE	FEATURES	COMMENTS
	The first vendor to support embedded encryption on both ISDN, IP and ISDN/IP conferences (requires encryption support on the endpoint) • Support for Secure Conference AES (128 bit AES support on ISDN/IP) • Support for Secure Conference DES (56 bit DES support on ISDN/IP) • Encryption Mode: Auto, AES, DES • Mix of AES and DES in the same conference **INCREASED SECURITY FOR THE ADMINISTRATOR**: • Encrypted connection between MCU and Administrator PC using HTTPS HyperText Transfer Protocol with SSL ensures that data you send is encrypted Automatic redirect unsafe HTTP to HTTPS • HTTP Digest authentication: IP-password is transmitted encrypted • Services can be disabled: Telnet, FTP, HTTP, HTTPS, SNMP, H.323 **<u>VIDEO</u>** • **XGA SUPPORT** Transmit and receive XGA (1024x768) custom video format • **ENHANCED VIDEO TRANSCODING**: (Supported in both H261 and H263) The best video quality possible for all participants connected at the highest conference rate Lower video quality when: not connected at the conference rate, a system downspeeds to a lower rate. • **"PEOPLE & CONTENT" SUPPORT** TANDBERG supports features from other vendors. PolyCom iPower systems can participate in a conference and receive People & Content on ISDN. The sending participant must be a TANDBERG system running Duo Video**TF**. **<u>AUDIO</u>** • For legacy and competitor products, G.728 is supported (up to 6 sites can use G.728.) Automatic fallback to other audio algorithms, G.722, G.722.1, G.711 • Mobile telephone noise suppression: Adding mobile telephones to a conference normally introduces a lot of noise to the conference. The Dynamic Noise Reduction attenuates this noise. **<u>USER INTERFACE</u>** • Improved User Interface: new layout/colors, additional icons • The administrator can mute audio from participants • Entry/exit tones improvement: The tones heard when a participant enters or leaves a conference can be switched off. • 'Welcome to the conference' improvement: The 'Welcome to the conference' snapshot and its corresponding audio message can be switched off. • Max call timer: a maximum conference time can be defined. a 'remaining time' symbol will be shown to all participants 10 minutes, 5 minutes and 1 minute before the end of conference.	
D1.1 *Oct.2002*	**<u>VIDEO</u>** • Improved lipsync/video delay on lower bandwidths • Improved video quality (frame rate) with 15 and 16 video sites	

SW VERSION & DATE	FEATURES	COMMENTS
D1.0 *July 2002*	**NETWORKS** • 4 x E1/T1 G.703 (RJ-45) for ISDN PRI • 2 x LAN/Ethernet (RJ-45) 10/100 Mbps[4] • Ethernet/Internet/Intranet Connectivity, TCP/IP, DHCP, ARP, FTP, Telnet, HTTP, SNMP Enterprise Management, Internal WEB server • Support for TANDBERG Management Suite • 10/100Mbit full/half duplex (manual or auto detect selection) • Bandwidth H.320 up to 2Mbps **MCU** • Supports Duo Video, Encryption, Downspeeding**TF**, • Dial in / dial out capabilities **SOFTWARE OPTIONS :** • Upgrading from standard (version 8+8) to 16+16 can be easily done by entering Software Option keys: 8+8 : 8 video endpoints + 8 audio (i.e. total of 16) - *Standard* 16+16 : 16 video endpoints + 16 audio (i.e. total of 32) **INTELLIGENT CALL MANAGEMENT**^{TF} **(ICM)** • Calls from data rates of 56 kbps up to 2 Mbps via ISDN networks. If the ISDN network drops channels during a meeting, the conference will not shut down but adjust to the remaining number of available channels[5]: 'Downspeeding**TF**' (accordance to the BONDING Mode 1 standard). **ASYMMETRIC CALL RATES** • The TANDBERG MCU supports asymmetric call rates. Various sites may call into the MCU on different call rates. The MCU will however transmit a call rate (to all participants) equal to the site with the lowest incoming call rate. If the conference is set up for a specific call rate and one or more systems only support lower call rates, the MCU will transmit the lowest common call rate, but still allow for receiving the initial set call rate from the other sites. **SECURE CONFERENCE**^{TF} **(Encryption)** • Standards based Embedded Encryption: H.233, H.234, DES • Automatic key generation and exchange • Separate welcome page for encrypted conferences • Built-in encryption of audio, video and data for H.320 calls up to 768 kbps, and Duo Video support. If a site, not supporting encryption, is calling into an encrypted conference, a snapshot will be displayed informing that the conference requires encryption. If a site connected to an encrypted conference starts sending unencrypted data, a snapshot will be displayed informing that the conference requires encryption and the site will be disconnected from the conference. **BEST IMPRESSION**^{TF} • Best Impression is a TANDBERG feature that allows the MCU, in Continuous Presence (CP) mode, to automatically select the best impression for the user- without any user intervention. Best Impression consists of two main parts:	Introduction of TANDBERG MCU 8+8 and TANDBERG MCU 16+16

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[4] H.323 calls have been implemented on D2 software version.

[5] If one of the connected sites does not support downspeeding**TF**, this site will drop out the call.

[6] Depending on the connected sites ability to transmit/receive Duo Video**TF**

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	Dynamic/Auto Layout switching in CP mode
	Automatic resolution switching in CP mode (CIF up to 4 sites, and 4CIF above)
	• The MCU may transmit a variety of picture modes:
	Auto mode
	Full screen picture - when Voice Switched mode is selected (VS)
	4 quadrants picture - when Continuous Presence 4 mode is selected (CP4)
	9 quadrants picture - when Continuous Presence 9 mode is selected (CP9)
	16 quadrants picture - when Continuous Presence 16 mode is selected (CP16)
	
	MCU CONTROL (H.231/H.243)
	• Request Floor from endpoints
	• Assign Floor to endpoint *(only* available for the administrator of the MCU)
	• Terminal Site naming
	
	H.243 PASSWORD
	• all endpoints must give the correct password to the MCU to join the conference. The password must be numerical.
	1) Password entered together with the MCU number
	   E.g. with MCU number=207987654 and password=1234, the number to dial by the endpoints will be 207987654*1234.
	2) Password prompted after the MCU is called (sound or picture prompt)
	   In this case, the TANDBERG MCU sends a TCS-1 message to the terminal right after the terminal has called the MCU. When the endpoint (telephone or video) receives this message, it will prompt the user for the password (sound or picture prompt).
	3) Password prompted after the MCU is called (DTMF tones)
	   The endpoints may also insert the password via their remote control (DTMF) to get access to the MCU.
	
	DUO VIDEO
	• The TANDBERG MCU is capable of receiving/transmitting two simultaneous H.320 video signals from/to all sites[6].
	• Broadcast of a site's presentation (all supported video resolutions)
	• Supported in Continuous Presence and Voice Switched mode
	
	VIDEO
	  VIDEO STANDARDS: H.261, H.263, H.263+
	• The TANDBERG MCU will automatically select H.263 on all bandwidths unless the far site only supports H.261.
	• Default/Customisable Snapshots: "Welcome" snapshot, "Password" snapshot
	• Snapshot of ongoing conference, Snapshot of ongoing Duo Video presentation
	
	  FRAME RATES:
	• 30fps@CIF CP and VS mode
	• 15fps@4CIF CP and VS mode
	
	  VIDEO FORMATS:
	• The TANDBERG MCU supports the following Live Video Resolutions:
	  - Native PAL: CIF, 4CIF, QCIF	

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	- Native NTSC: SIF, 4SIF
	  - Native PC: VGA, SVGA
	• Asymmetric Video Formats: can send and receive asymmetric video formats: any combination of the supported custom video formats
	
	AUDIO
	  AUDIO STANDARDS: G.711, G.722, G.722.1
	• Transcoding (each site will receive the quality equal to transmitted)
	• Restricted/unrestricted interfaces and bandwidths from 56 kbits-2Mbps in the same conference
	• Audio levelling/ Automatic Gain Control (AGC) will ensure that the audio sent out to all sites in the conference is at the same level.
	• Default and/or Customisable Sounds: Welcome sound, Password sound
	• Entry/Exit tones
	• Telephony can be used as a telephone bridge only, with up to 16 audio in the same conference.	

TANDBERG GATEWAY

SW VERSION & DATE	FEATURES	COMMENTS

G2.0
Oct. 2003
	NETWORKS
	• **Base version is 2Mb ISDN**
	  8 voice + 8 video up to 2Mb ISDN
	  Upgrade from G1.0 will get 2Mb version
	• **4Mb version** (enabled through bandwidth option key)
	  8 voice + 8 video up to 4Mb ISDN
	  Needs to get the bandwidth option key
	
	VIDEO
	• **H.264**
	  Video protocol supported as in E2 (TANDBERG codecs) and D3 (TANDBERG MCU)
	  Up to 768Kbps @30 fps, CIF
	  Still 8 @384kbps simultaneous video calls (no restrictions to number of calls)
	  Possible to disable H264:
	  –For interoperability issues
	  –Default is ON
	
	MANAGEMENT
	• SNMP traps for FTP activity
		H.264 support

G1.0
July 2003
	NETWORKS
	• 2 software versions:2 Mb or 4 Mb (maximum 8 video and 8 telephone ports)
	• Dual PRI (4Mb ISDN E1)
	• Optional use up to 4xPRI (max 4Mb ISDN)
	• Maximum video capacity at different call rates:
	    2 @ 2 Mbps
	    5 @ 768 kbps (3 @ 768 kbps encrypted)
	    8 @ 384 kbps (5 @ 384 kbps encrypted)
	    8@ 128 kbps (7 @ 128 kbps encrypted)
	• Video and telephone ports at the same time:
	    4 @ 768 kbps video and up to 8 telephones
	    8 @ 384 kbps video and up to 4 telephones
	    8@ 128 kbps video and up to 8 telephones
	
	H.320
	• Flexible ISDN Dial-in Services
	  - Dial from ISDN to IP using: DID (Direct Inward Dialing), IVR (Interactive Voice Response), TCS-4, Hotline/Operator mode
	  - Any combination can be used
	• Full downspeeding implemented
	• Specify range of PRI numbers
	• ISDN PRI Trunk groups supported	

SW VERSION & DATE	FEATURES	COMMENTS

	H.323
	• Flexible IP Dial-out Services
	  - Service Prefix
	  - Load balance
	  - Full implementation of flow control
	• IPLR support
	• IP QoS Features
	  - RSVP: guaranteed bandwidth in IP calls (requires support by routers and endpoints)
	  - Quality of Service:
	      - Diffserv (audio, video, data, signaling)
	      - IP Precedence (audio, video, data signaling)
	      - TOS (Type of Service)
	
	MCU
	• H243 Transparency **(**First to create a seamless MCU connection through a GW)
	  All MCU commands and information signaling:
	  - Request/Release floor
	  - Site naming
	  - Cascading signaling
	  - On-Air signaling
	  - Microphone Off signaling
	
	MANAGEMENT
	• Call Transfer: (available from internal Web Page on Gateway)
	  - Transfer dial-in ISDN calls:
	      - Dial in to an operator or admin on IP
	      - Operator can transfer the call to another IP site
	  - Transfer dial-out IP calls (when call is connected the call can be transferred to another IP site)
	      - Operator or admin dials from their own system on IP out to a ISDN site
	• Far End Camera Control using H224
	• Chat (T.140)
	• Data channel (SSTRING)
	• T120 not supported
	
	DUO VIDEO
	• Supports Duo Video
	  - Supported on 8 ports simultaneously
	  - Automatically adjusts video bandwidth on IP & ISDN
	• Supports People+Content on ISDN: (available on Polycom FX, EX and iPower with SW version 5)
	  Duo Video on IP can be mapped to People+Content on ISDN
	
	SECURITY
	• Secure Conference[TF]	

SW VERSION & DATE	FEATURES	COMMENTS

	The first vendor to support embedded encryption in a Gateway:
	- Support for Secure Conference[TF] AES: 128 bit AES support on ISDN/IP
	- Support for Secure Conference[TF] DES: 56 bit DES support on ISDN/IP
	- Encryption Mode: Enable/Disable
	- Requires encryption support on both endpoints (encryption will reduce the number of video ports available)
	- No mix of AES and DES in a GW call
	• Secure Access**:**
	- Secure Management
	      - New XML/SOAP over HTTPS
	      - New SNMP traps only mode
	      - No need for telnet and FTP
	- Web (HTTP) encrypted password
	- Available services (can be disabled): Telnet, FTP, HTTP, HTTPS, SNMP
	
	USER INTERFACE
	• Custom welcome picture & sound (used for IVR and TCS-4 mode)
	• Custom "please wait" picture & sound (displayed when video is not received i.e. when ISDN call is connecting, transferring or downspeeding a call)
	
	VIDEO
	- Supports H261, H263, H263+, H263++ (H264 will be supported in future release SW version)
	- From QCIF to XGA and Interlaced 50/60Hz video, Still images
	- No degradation of quality (no transcoding)
	
	AUDIO
	- Supports G711, G722, G728, G722.1
	- Full transcoding of audio
	- Custom audio welcome messages for IVR
	- Custom audio "please wait" messages	

TANDBERG 8000/7000/6000/2500/1000/880/550

SW VERSION & DATE	FEATURES	COMMENTS
E2.3 *Oct 2003*	**USER INTERFACE** • Traditional Chinese	

E2.2
 	
Sept 2003
 	
&
 	
E2.1
 	
Aug. 2003
	SECURITY
	• New dataport command "strictpassword <on/off>" (not available on Menu or WEB)
	  When "on", a new IP password must be at least 8 characters containing both letters and numbers
	  When "off" all IP passwords are accepted (including blank password)
	  Default value is "on"
	• New dataport command "wlan enable <on/off>" (not available on Menu or WEB)
	  When "off" WLAN is unusable even if a WLAN card is inserted.
	  When "on" WLAN behaves as before.
	  Default value is "on"
	• New SNMP traps when these FTP activities are detected:
	  logon / logoff
	  GET / PUT
	  DELETE / RENAME
	  MKDIR / RMDIR
	  CD
	• New dataport command "netisdn sub <on/off>" (not available on Menu or WEB)
	  Networks that do not support subadress might cause the call to be disconnected if using "<number>*<password>" dialling into an MCU
	  When "off", ISDN subadressing is not used
	  When "on", ISDN subadressing is used as before
	  Default value is "on"	

E2.0
 	
July 2003
	H.320
	• Relaxed BONDING timer
	  Available through the dataport command: bondingtimer normal/relaxed
	  Prevents problems against external encryption devices etc.
	• Improved feedback when downspeeding
	
	H.323
	• H323 Bearer Cap supported (useful for MCU's and GW's)
	  - "restrict" to define Nx56 kbps calls
	  - "telephony" to signal telephony
	
	MULTISITE
	• "Chair Control" (H243) on H323 (same support on IP and ISDN):
	  - Floor Request and Release
	  - Sitenaming and view indication
	  - Multisite cascade
	  - Microphone off indication
	  - TCS-1 Password
		H.264 support

SW VERSION & DATE	FEATURES	COMMENTS

	• MultiSite with mixed V.35 and IP
	  V.35 party must be called first
	  V.35 and ISDN cannot be mixed
	
	SECURITY
	• Additional telnet port
	  - Enables "MD5 Challenge" encrypted password
	  - Using a selectable port (port 57 is default)
	  - Can be enabled / disabled
	  - For management (TMS)
	  - In addition, regular telnet (port 23) is active (and can be disabled)
	• Factory default IP password**:** "TANDBERG" (same as on the MCU)
	• Increased Gatekeeper reliability
	  - Automatic and regular re-registration on gatekeeper
	  - Better feedback when gatekeeper rejects a call
	• IP conflict warning
	  - Warning on "welcomescreen" if the system has an IP address that is already in use (no reboot required when conflict is solved)
	
	VIDEO
	• H.264: available on all enhanced TANDBERG endpoints (default setting is: Off)
	  - T8000, T7000, T6000, T2500, T880: CIF/SIF @ 30 fps encoding and decoding, (up to 768kbps)
	  - T1000/T550: CIF/SIF @ 15 fps encoding and decoding (up to 384kbps)
	  - Limitations:
	       - Not available when running DuoVideo
	       - Not available in MultiSite
	       - Automatic switch to H263 when limitations apply
	• Web snapshots: for maintenance and monitoring
	  - Snapshots reflects what you see on Main Monitor and Dual Monitor (automatically disabled in encrypted calls)
	  - Updates every 5 seconds, available with TMS 7 or internal Web page
	  - Enable/Disable through local interfaces only (off by default)
	  - Protected with IP Password.
	  - Snapshots are not stored on the codec
	• Single monitor Duo Video (ideal solution for Projector based systems)
	  Transmit or receive DuoVideo with single monitor systems (requires Natural Presenter Package as before):
	  - Transmit DuoVideo:
	       - Local presentation in Full screen, Remote participant in PIP
	       - Selfview key toggles between these two
	
	  - Receive DuoVideo
	       - Remote presentation in Full screen, Remote participant in PIP
	       - Selfview key toggles full screen between Remote Presentation and Local Selfview
	• Presentation enhancements to High resolution Monitor Package (XGA): available on T8000, T7000, T6000, T2500, T880	

SW VERSION & DATE	FEATURES	COMMENTS

	- Received presentation will always be displayed on the XGA monitor
	- Receiving a PC presentation on main stream will switch the presentation to second monitor (XGA)
	• Resolution enhancements on T7000 (LCD monitors)
	- Screen format can be controlled by end user when displaying a PC image:
	   - Wide (16:9) by default: entire screen is filled
	   - Normal (4:3): Aspect ratio is maintained
	
	AUDIO
	• G722.1 supported on H.323 (24kbps and 32kbps): automatically replace use of G728 when possible
	• Line-input can be configured on T550: Mic/AUX, same as good old T500
	• Audio Packet size: automatic selection of 20ms or 40ms packets (ideal for VPN links etc)
	
	USER INTERFACE
	• Russian (11 menu languages now available)
	• Improved directory layout:
	- Namefield can be 30 characters
	• Keytones
	- Beep when entering numbers and characters in menu
	• Mic OFF when idle
	- Dataport: Automute on/off	

E1.3 *Apr. 2003*	**H.323** • IP only software designed for T880 This software will only support dialing on H.323. T880 IP only: up to 768Kbps (S08601 for PAL systems, and S08604 for NTSC systems)	TANDBERG 880 IP only (up to 768 Kbps)
E1.2 *Mar. 2003*	**H.323** • Alternate gatekeeper support: If the endpoint registers to a gatekeeper that supports alternate gatekeeper, the endpoint will receive a primary and secondary gatekeeper address. If the primary gatekeeper fails, the codec will register to the secondary gatekeeper that was declared by the primary gatekeeper. Alternate Gatekeeper supported in the follow Gatekeeper: Cisco MCM Sw 12.2 **SECURITY:** • When non-encrypted sites are added to an encrypted conference, encryption will be disabled. This has changed so there is no confusion around which connections are encrypted. A message will be displayed indicating that encryption has been disabled if a non-encryption capable device connects. **USER INTERFACE** • Welcome Screen (My ISDN Number) When the BRI layer 1 is not active, 'Network Not Active' will be display next to 'My ISDN Number' on the welcome screen. *Note: Supported only in the US with National ISDN & AT&T Custom ISDN Networks* • Improved XGA Quality E1.2 software removes noise that could be generated from PC's into the XGA video	New TANDBERG 7000

SW VERSION & DATE	FEATURES	COMMENTS
E1.1 *Jan. 2003*	**H.323** • Request floor available on H.323. **SECURITY:** • Stronger encryption: AES on H.323 • SNMP security alert when wrong ippassword is entered (increase security) **USER INTERFACE** • "mic off" symbol will flash on screen when voice activity is detected. • Menu password (Password to protect the access to the menu) • Global directory size has been increased to 400 entries • Customized logo size increased 704x480. **VIDEO** • Interlaced XGA/SVGA out for Loewe TV • XGA support Transmit and receive XGA (1024x768) custom video format	XGA support for enhanced graphical monitors package Introduction of Camera Wave II

TANDBERG 8000/7000/6000/2500/1000/800/500

SW VERSION & DATE	FEATURES	COMMENTS
B7.3 *Oct 2003*	**USER INTERFACE** • Traditional Chinese	

B7.2
Sept. 2003
 	
&
 	
B7.1
Aug. 2003
	SECURITY
	• New dataport command "strictpassword <on/off>" (not available on Menu or WEB)
	  When "on", a new IP password must be at least 8 characters containing both letters and numbers
	  When "off" all IP passwords are accepted (including blank password)
	  Default value is "on"
	• New dataport command "wlan enable <on/off>" (not available on Menu or WEB)
	  When "off" WLAN is unusable even if a WLAN card is inserted.
	  When "on" WLAN behaves as before.
	  Default value is "on"
	• New SNMP traps when these FTP activities are detected:
	  logon / logoff
	  GET / PUT
	  DELETE / RENAME
	  MKDIR / RMDIR
	  CD
	• New dataport command "netisdn sub <on/off>" (not available on Menu or WEB)
	  Networks that do not support subadress might cause the call to be disconnected if using "<number>*<password>" dialling into an MCU
	  When "off", ISDN subadressing is not used
	  When "on", ISDN subadressing is used as before
	  Default value is "on"	

B7.0
July 2003
	H.320
	• Relaxed BONDING timer : prevents problems against external encryption devices etc
	  Available through the dataport command: bondingtimer normal/relaxed
	• Improved feedback when downspeeding
	
	H.323
	• H323 Bearer Cap supported (useful for MCU's and GW's)
	  - "restrict" to define Nx56 kbps calls
	  - "telephony" to signal telephony
	
	MULTISITE
	• "Chair Control" (H243) on H323 (same support on IP and ISDN):
	  - Floor Request and Release
	  - Sitenaming and view indication
	  - Multisite cascade
	  - Microphone off indication
	  - TCS-1 Password
	• MultiSite with mixed V.35 and IP	

SW VERSION & DATE	FEATURES	COMMENTS

	V.35 party must be called first
	V.35 and ISDN cannot be mixed
	
	SECURITY
	• Additional telnet port
	  Enables "MD5 Challenge" encrypted password
	  Using a selectable port (port 57 is default)
	  Can be enabled / disabled
	  For management (TMS)
	  In addition, regular telnet (port 23) is active (and can be disabled)
	• Factory default IP password:"TANDBERG" (same as on the MCU)
	• Increased GateKeeper reliability
	  Automatic and regular re-registration on gatekeeper
	  Better feedback when gatekeeper rejects a call
	• IP conflict warning
	  Warning on welcomescreen if the system has an IP address that is already in use (no reboot required when conflict is solved)
	
	VIDEO
	• Web snapshots: for maintenance and monitoring
	  Snapshots reflects what you see on Main Monitor and Dual Monitor (automatically disabled in encrypted calls)
	  Updates every 5 seconds, available with TMS 7 or internal Web page
	  Enable/Disable through local interfaces only (off by default)
	  Protected with IP Password.
	  Snapshots are not stored on the codec
	• Single monitor Duo Video (ideal solution for Projector based systems)
	  Transmit or receive DuoVideo with single monitor systems (requires Natural Presenter Package as before):
	  - Transmit DuoVideo:
	          - Local presentation in Full screen, Remote participant in PIP
	          - Selfview key toggles between these two
	  - Receive DuoVideo
	          - Remote presentation in Full screen, Remote participant in PIP
	          - Selfview key toggles full screen between Remote Presentation and Local Selfview
	
	AUDIO
	• G722.1 supported on H.323 (24kbps and 32kbps)
	  Automatically replace use of G728 when possible
	• Line-input can be configured on T550
	  Mic/AUX, same as good old T500
	• Audio Packet size
	  Automatic selection of 20ms or 40ms packets
	  Ideal for VPN links etc	

SW VERSION & DATE	FEATURES	COMMENTS
	USER INTERFACE • Russian (11 menu languages now available) • Improved directory layout: name field can be 30 characters • Keytones: beep when entering numbers and characters in menu • Mic OFF when idle (available through dataport command: Automute on/off)	

B6.2
Mar. 2003
	H.323
	• Alternate gatekeeper support:
	  If the endpoint registers to a gatekeeper that supports alternate gatekeeper, the endpoint will receive a primary and secondary gatekeeper address. If the primary gatekeeper fails, the codec will register to the secondary gatekeeper that was declared by the primary gatekeeper.
	  Alternate Gatekeeper supported in the follow Gatekeeper: Cisco MCM Sw 12.2
	
	SECURITY:
	• When non-encrypted sites are added to an encrypted conference, encryption will be disabled. This has changed so there is no confusion around which connections are encrypted. A message will be displayed indicating that encryption has been disabled if a non-encryption capable device connects.
	
	USER INTERFACE
	• Welcome Screen (My ISDN Number)
	  When the BRI layer 1 is not active, 'Network Not Active' will be display next to 'My ISDN Number' on the welcome screen.
	  *Note: Supported only in the US with National ISDN & AT&T Custom ISDN Networks
	• Improved XGA Quality
	• B6.2 software removes noise that could be generated from PC's into the XGA video.	

B6.1 *Jan. 2003*	**H.323** • Request floor available on H.323. **SECURITY:** • Stronger encryption: AES on H.323 • SNMP security alert when wrong ippassword is entered (increase security) **USER INTERFACE** • "mic off" symbol will flash on screen when voice activity is detected. • Menu password (Password to protect the access to the menu) • Global directory size has been increased to 400 entries	Introduction of Camera Wave II

B5.1 & B5.11
Nov 2002
	H.323
	• Enhanced QoS:
	  Support for DiffServ, RSVP, IP Precedence, TOS
	• "Audio only" H.323-participant in MultiSite
	• Multiple SNMP trap hostsIntelligent Packet Loss Recovery (IPLR^{TF}): first ever standards-based packet loss compensation on H.323
	  All video protocols and resolutions (H.261, H.263, CIF, VGA, etc)
	  Compatible with all Terminals, Gateways and MCUs
	  Automatically started when packet loss is detected, improves received and transmitted video	

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[7] Requires modified codec T1000 and B5.11 software (Privacy function not available in B5.1 unmodified T1000 use 3.5mm mini jack)

SW VERSION & DATE	FEATURES	COMMENTS

	DUO VIDEO
	• Duo Video in MCUSingle monitor systems and standard systems (no software options) will show Duo Video presentation
	  The presentation (Duo Video) will replace main video
	  All end points T500, T550, T800, T880, T1000, T2500, T6000, T7000, T8000
	
	SECURITY:
	• Encryption in point to point (Max 768kbps)
	  - Stronger encryption on H.320 (128bit AES, 56bit DES)
	  - Encryption on H.323 (H.235)**TF** (56bit DES)
	• Encryption in Multisite (Max 768kbps)- <u>IP only Multisite</u> (supports 56bit DES): 3x384kbps, 4x256kbps
	  - <u>ISDN only Multisite</u> (supports 128bit AES and 56bit DES): 3x384kbps, 4x256kbps
	  - <u>MIXED Multisite</u> (supports 128bit AES and 56bit DES): 3x384kbps, 4x256kbps
	  All endpoints must support encryption. If total MCU bandwidth exceeds 768kbps, encryption is disabled
	• Services can be disabled: Telnet, FTP, HTTP, SNMP, H.323, rinfo and remote software upgrade
	
	USER INTERFACE
	• New welcome-screen
	• Icons for Encryption, MicOff, Volume Off
	• Chinese and Japanese menu languages
	• Better use of Quick Keys (i.e. "Back" when Blue Quick key is used)
	• More H323 call feedback
	• Chat on Streaming Web page
	• External keyboard support for direct Text Chat (connected to dataport1).
	
	MANAGEMENT
	• Dataport command "eventlog"
	• New H.323 cause codes (Q.931)
	• Dataport improvements for integrators: better feedbacks
	
	VIDEO
	• Interlaced (iCIF/iSIF) threshold: Select when interlaced video should start (auto, 384kbps->2Mbps)
	
	AUDIO
	• Auto VCR audio: VCR audio is activated only when VCR is selected (VCR audio is muted when VCR is not selected)
	• Privacy function on modified T1000[7]: Mini-jack (2.5mm) for connecting headset (Internal Microphone and Speaker switched off	

B4.4 *June 2002*	**EXTERNAL NETWORKS** • Support for External Networks on T880 NET	Introduction of T880 Net (Ext. networks / IP)

SW VERSION & DATE	FEATURES	COMMENTS
B4.3 *May 2002*	**EXTERNAL NETWORKS** • Extended RS366 transmission timer from 16 to 30 sec **MANAGEMENT** • The ability to display a 3 site CP image as a 4 site CP image with one of the quadrants black. (activated by typing the dataport command: Multisite cp4) **SECURITY** • Changed name of security command to services (security ftp enable/disable -> services ftp on/off)	

B4.2 *May 2002*	**H.323**
	• SNMP Community name was limited to 8 characters in menu. Will now be 16 characters - done to make it consistent with dataport/Web-interface
	
	EXTERNAL NETWORKS
	• V.35: Extnet DCD sampling increased to 1 second. A one second "window" where the codec will keep DTR high, even though CD is low, is added.
	
	MULTISITE
	• When calling to an MCU asking for password, CONNECT can be pressed to submit password.
	
	SECURITY
	• Password - security enhancement.
	   When a system is protected with an IP-password and someone tries to access the system with wrong password, the login-window will no longer be closed immediately. It will now be closed after two seconds. This will make it more difficult to perform brute-force attacks on the system.
	
	MANAGEMENT
	   New Dataport command: security will make it possible to enable/disable ftp server.	

B4.1 *Mar 2002*	**H.323** • Support for Wireless T550 **USER INTERFACE** • Beep when sleep mode and max call menus are displayed	Introduction of T550
B4.0 *Feb 2002*	**H.320** • H.243 MCU password requests from external MCUs (H.320) **H.323** • RSVP (QoS on IP) guaranteed bandwidth during call (Requires support by routers and endpoints) • Voice only on H.323 to any H.323 system, highest common audio algorithm will be picked • Support for Cisco Aironet 350 series (AIR-PCM 350 series) on Wireless T1000 • Re-registration on Gatekeeper every 10th second if registration is lost • E.164 alias length extended from 16 to 30 digits **MULTISITE** • H.323 MS Cascading – up to 768 kbps to the cascaded MS, manual switch to CP to avoid CP in CP – no support of site name – no request floor from endpoints	Introduction of T880 and new TANDBERG Natural Audio Module for T6000 and T8000.

SW VERSION & DATE	FEATURES	COMMENTS
	• Multisite can give floor to site, automatic chairman on the host on any network, (from B2 software: endpoints can request floor on H.320 only) • New quick key - Easy CP/Voice Switch in Multisite calls • When dialling MS entries, the user will be asked to SKIP unanswered site(s) • Chairman will be notified about a floor request when connected to an external MCU running chair control **STREAMING** • Voice switched (auto) or manual selection of streaming from local or far end video (T500 and T1000 – local view only) • Separate streaming password hidden with '*' **SECURITY:** • Auto encryption of Video, Audio and Data on H.320, all TANDBERG systems with B4 software or higher • Encryption supported on ISDN up to 768 kbps, Diffie-Hellman key distribution and DES encryption algorithm, supporting the H.233 & H.234 standards • Encryption support for point to point, Duo Video, FECC and T.120 • Max call length up to maximum 3 hours – will prompt user when time has lapsed if user want to extend time. • Access Code for identifying and approving the person before making a call (IP and ISDN) • Account codes (supported from TMS v .4) for allocating the cost between people and user groups. • VNC Password hidden using '*' **USER INTERFACE** • Text Chat (T.140 ITU standard) from web interface during calls (Point to point only, available on H.320 & H.323), automatic start/stop, and just start entering text. Duo Video support • MCU Status Line: Auto - timeout of Multisite/MCU/Duo Video indicators • Timeout for MCU/MS/Duo Video indicators (grabbing the remote control will redisplay the indicators) • Sleep mode delay can be set to 60 min or 3 hours, before the sleep mode prompt • When leaving a directory entry will the highlighter return to the same position • Welcome Menu setting (On/Off) will be saved during reboot **MANAGEMENT** • Remote ISDN software upgrade via Web on all networks. • Local sw upgrades via FTP will save and restore all settings automatically **VIDEO** • Manually adjusted camera white balance on T1000	
B3.4 *Jan 2002*	**VIDEO** • Manual white balance adjustments for the TANDBERG 1000. • Improved video decoder when bit error or packet loss are detected – picture freezes. • Improved interoperability of video still images (particularly when receiving a still image from old CLI's and PTEL Concorde).	
B3.3 *Nov 2001*	**H.323** • Support for Wireless LAN (T1000): Lucent Orinoco 11 Mbps SILVER and Compaq WL110 11 Mbps Wireless LAN **MULTISITE** • H.243 password: dial 5553333444*1234, where 1234 is the password. **MANAGEMENT**	Support for Wireless LAN on T1000. Introduction of T8000

SW VERSION & DATE	FEATURES	COMMENTS
	• MCU commands on dataport can disconnect conference and not only sites (CCA)	
B3.2 **&** **B3.1** *Aug 2001*	**H.323** • Support for Cisco IP/TV (SAP) **DUO VIDEO** • Duo Video should work with the new SW for the Accord MCU (ISDN only). Set "duo number manual" to enable this feature. **MULTISITE** • Telephone-sites in Multisite Directory	
B3.0 *July 2001*	**H.323** • 3Mbps over IP • H.323 version 3 • Network Address Translation (NAT) support • Flow control during packet loss • SNMP updates • WEB interface changes • VNC capabilities • Selectable LAN interface speed • Redefined IP precedence values **DUO VIDEO** • Change distribution of channels when Duo Video • Duo Video in Multisite **MULTISITE** • H.320/H.323 Multisite • Multisite Cascade • H320 Downspeeding In Multisite • H323 Multisite Voice Switched Mode • Multisite directory store • Indication of entering/leaving sites in Multisite **USER INTERFACE** • New interface Languages. • Boot Logo • System info menu • Quality menu shows 'kbps' instead of 'ch' **MANAGEMENT** • Boot startup scripts • Remote software upgrade (via ISDN) • Global directory support	3Mbps H.323 on Codec 6000

SW VERSION & DATE	FEATURES	COMMENTS
	AUDIO • Noise reduction in Cascaded H.320/H.323 Multisite **VIDEO** • H.263 custom resolutions • Improved interlaced CIF (Natural Video) (auto 768, available from 384) • Absolute positioning of more than 1 wave camera • Camera brightness stored with camera-presets • Camera auto-tracking on/off setting	
B2.4 *May 2001*	**USER INTERFACE** • Front-LED is now always on except when a button on the remote control is pressed.	
B2.3 *May 2001* & **B2.2** *Apr 2001*	**H.320 / H.323 / EXTERNAL NETWORKS** • H331 functionality (broadcast). Works on all H320 networks (BRI, PRI, external net). New dataport command: *h331mode on/off* **USER INTERFACE** • Language support for Italian and Portuguese	

B2.1
 Feb 2001
 &
 	
 B2.0
 	
 Feb 2001
	H.320
	 • PRI bandwidth 2Mbps option for TANDBERG 6000/7000 (2Mbps on E1 and 1.544Mbps on T1).
	 • Support for CRC-4 and non CRC-4 on ETSI E1.
	 • Daisy chaining PRI's supported up to 2Mbps.
	 • Leased Line E1/T1 (G.703) implemented using manual mode: 768 kbps version: standard for TANDBERG 6000/7000 (2Mbps version: option)
	 • Restrict 56k Calls using the blue smart key ('#' is no longer supported).
	 • TCS-4 Support For ISDN/IP Gateways.
	 • Q.931 Sending Complete option (for some PBX's that do not support 'Sending Complete')
	 • Auto SPID detection when the ISDN switch supports the protocol (for National ISDN)
	
	 H.323
	 • H.323 Far End Camera Control (not in Multisite and not available in external MCU's)
	 • Cisco's IP Precedence Type of Service (TOS)
	 • IP Speeds for the 500, 800, 1000, and 2500 have been increased to 768 kbps.
	   768 kbps IP: 500/1000 (384 kbps ISDN), 800/2500 (384 kbps ISDN)
	   384 kbps IP: 500/1000 (128 kbps ISDN)
	 • Ping, available through RS232 serial port or Telnet.
	 • Traceroute, available through RS232 serial port or Telnet.
	
	 EXTERNAL NETWORKS
	 • 2Mbps on External Networks (V.35/RS449/RS366). Leased line/manual/data triggered/RS366 modes supported
	
	 DUO VIDEO
	 • Duo Video over leased line E1/T1 networks through the RJ45 PRI port.
	 • Duo Video over H.323
		Introduction of T1000,
		
		 2Mbps E1 and ext network on codec 6000
		
		 768 Kbps H.323 on T500/T800/T1000/ T2500

SW VERSION & DATE	FEATURES	COMMENTS

	MULTISITE
	• H.320 Multisite bandwidths increased to 4@512 kbps or 3@768 kbps with:
	  Natural Video (60 fields per second) when using VIP function (take floor) or Voice Switched
	  4CIF Digital Clarity when using VIP function (take floor) or Voice Switched
	  Audio bridging using ISDN
	  Supports Continuous Presence and Voice Switching
	• H.323 Multisite support 4@768 kbps or 3@1 Mbps:
	  Dial in and dial out
	  Audio bridging support over ISDN, please see Audio Bridge for more details.
	  Continuous Presence
	  Flow control to 'downspeeding^{TF}' when adding sites
	  Sending 4CIF when floor is taken (on Multisite only)
	• Audio Bridge with a maximum capacity of 5 audio only sites, both dial in and dial out (for all systems H.320/H323 with MS option)
	  Max 5sites (4 video sites + 1 audio sites, 3 video sites + 2 audio sites, 2 video sites + 3 audio sites, 5 audio sites)
	  Video rates depend on product and available bandwidth.
	• Multisite Dial In Numbers displayed in the 'Power Up and System Info' screen.
	
	STREAMING
	• Streaming during a videoconference (streaming of local video and audio mixing of near and far end site).
	• Streaming video bandwidth selectable from 16 kbps to 320 kbps for a maximum of 384 kbps (64 kbps audio).
	• Streaming not possible during Multisite or Duo Video
	• Streaming Indicator relocated to the top right of the screen.
	
	USER INTERFACE
	• Volume Off Indicator.
	• Mute on Auto-Answer.
	• Local Presentation Mode available out of a video call (pressing 'selfview' out of a call will show the local image on both monitors).
	• Simplified Directory Search (like on mobile phones).
	• New Call Status feedback improvements including: Time of call, Protocol used, Connection status
	• Web Interface changed to new TANDBERG image.
	• Camera presets and sources selectable from the web interface
	
	MANAGEMENT
	• Syslog, available through RS232 serial port or Telnet (will capture BONDING, Q.931, H.221, H242, and H.225 information)
	• Audio Feedback, available through RS232 serial port or Telnet (Not on TANDBERG 500/800/1000).
	• Absolute Camera Positioning through RS232 serial port or Telnet for WAVE camera or VISCA (Not available on TANDBERG 500/800/1000).
	• Call Status Improvements, available through RS232 serial port or Telnet (Not available on TANDBERG 500/800/1000)
	
	AUDIO
	• Audio Mode can be changed 'On The Fly', possible in both H.320 and H.323.
	• Adjustable Echo Cancellation (as B1.2)	

SW VERSION & DATE	FEATURES	COMMENTS
	VIDEO • Video Mode can be changed 'On The Fly', possible in both H.320 and H.323.	
B1.2 *Jan 2001*	**H.320** • Removed 'Sending complete' on Australian ISDN **H.323** • Uploading 512 kbps version on a TANDBERG 800 or a 2500 will give 768 kbps on IP. **AUDIO** • New audio settings for adjustments of echo control; Room Size and Movements.	
B1.1 *Nov 2000*	**H.323** • Version number information in H323 **STREAMING** • Increased streaming window on Web **USER INTERFACE** • PIP will be displayed when you grab the remote (AutoPIP needs to be ON). • Outgoing ringing volume follows 'Master' volume.	

SW VERSION & DATE	FEATURES	COMMENTS
B1.0[8] *Oct 2000*	**H.320** • E1 PRI support up to 768 kbps • Added NSF support for call-by-call • Codec will re-establish call after receiving 'Network error' for more than 18 seconds. **H.323** • H.323 up to 2Mbps • Able to register and use gatekeeper • Direct IP dialling **MULTISITE** • Continuous Presence in MCU (Added 'Take Floor' to see speaker full screen) • FECC in External MCU added **STREAMING** • Streaming outside of a video call **USER INTERFACE** • Added Network Profiles • Added Network selection 'Auto', 'ISDN', 'LAN' • Improved call status • New Call Status menu, Channel Status in now like the former Call Status **MANAGEMENT** • Added software option release key by remote control **AUDIO** • Added G722.1 7kHz support (24kps at 1B, 2B, 32kps at 3B, 4B) **VIDEO** • VGA on single monitor	Introduction of T500, 2Mbps H.323 on codec 6000 768 kbps E1 PRI on codec 6000
A2.5 *Dec 2000* & **A2.4** *Sept 2000*	**MANAGEMENT** • Data port commands ATI 6 and ATI 7 implemented (see Data Port specification) This is a software upgrade to be used for A1.X and A2.X (ie. Systems without H323).	
A2.3 *Sept 2000* &	**H.320** • Improved PRI/BRI activation/deactivation detection.	Necessary on T7000

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[8] Please note that upgrades from Ax.x to Bx.x will not remember the option key.

SW VERSION & DATE	FEATURES	COMMENTS
A2.2 *July 2000*	**MULTISITE** • Symmetric data in MCU calls on LSD channel implemented **USER INTERFACE** • Web interface corrections: Fetex network selection added. • Low intensity "do not disturb" text to avoid burning of screens (screensaver is turned off when this is enabled). **VIDEO** • Video resolution ICIF on Basic SW. ICIF now available on all SW versions >= 512 kbps • VGA out resolution stored in NVRAM.	
A2.1 *June 2000*	**USER INTERFACE** • Extra delayed feedback of screensaver for the plasma screens (TANDBERG 7000)	Screen saver fix on T7000
A2.0 *June 2000*	**H.320** • First available PRI number answering mode. • FETEX protocol supported • Incoming H0 call rejected if you are in a 6B call. • Sending Complete on ETSI/Australia and all ISDN protocols except US versions. **H.323** • SNMP support (update in Menu/data-port/WEB) **DUO VIDEO** • Multisite and NPP support, software options • Duo Video enhancements: toggle output, messages on both monitors and quick keys **MULTISITE** • Multisite and NPP support, software options • Enhanced MCU terminal menu (quick menu) • Terminal name on the MCU can be forced by selecting Terminal ID in menu or Web. • H243 feedback implemented. **USER INTERFACE** • Text on 2nd monitor (not VGA) • Directory entry "delete confirmation" • Store Last Number will set quality to Auto (6B) unless you visit the sub menu Quality • Dialled number reporting on BRI interfaces • Stop incoming telephone calls **MANAGEMENT** • Local or remote loop mode (for testing). • Screensaver delay, feature for presenting/VCR etc. (15, 30 or 60 minutes uptime)	Introduction of T2500, Introduction of T800, Introduction of SW options for NPP and MS

SW VERSION & DATE	FEATURES	COMMENTS
	• Boot system from menu • Support for new functions in data port (site names) • Camera Upload **VIDEO** • ICIF (CIF 60 fps NTSC, 25fps PAL, interlaced CIF) • VGA output	
A1.5 *Mar 2000* to **A1.0** *Feb 2000*	**H.320** • H0 calls defaults to G722 and not G728 **DUO VIDEO** • Duo Video support • VGA input • Digital clarity **MULTISITE** • Multisite (3@384, 4@256, 4@128, voice activated) • Improved MCU interoperability against older PTEL systems (will use G.722 48kps audio) • Time to answer an incoming MCU call has been increased from 10 to 15 seconds • Added an error message on Multisite if only new site connects in restricted (56K) mode **USER INTERFACE** • Added Store Last Number dialled • Improved Call status reporting **MANAGEMENT** • Software upgrade from Web-browser • Improved dataport commands (chanstat, test, statin/statout etc) • Case insensitive for .pkg/.prm file name for ftp server	Introduction of *Vision 6000,* *Vision 7000,* *Both one codec, codec 6000*

Vision 5000/Vision 800/Vision 2500

SW VERSION & DATE	FEATURES	COMMENTS
C4.0 *June 2000*	**H.320** • ISDN protocol changes. Added support for FETEX switch for ISDN BRI and 'Sending Complete' on EuroISDN to get approvals in Taiwan • Sending Complete included in all ISDN protocols except the US versions • RING reports the "dialled number". The command to enable dialling and dialled number reporting is ATX5. E.g.: RING [Caller ID] DID:[Number Called] **H.323** • SNMP support. Support of MIB-II as defined in RFC 1213. **MULTISITE** • Site naming in MCU. H243 support of local systemname in a MCU call (added to all interfaces; Telnet, web, menu). **USER INTERFACE** • Gives earlier chanstat information • Chanstat reports 'looped' when the current channel is looped. • Dialled Number Reporting on BRI Interfaces. **MANAGEMENT** • Keep LOS parameters after reboot. **AUDIO** • Set Noise reduction default on. **VIDEO** • Restricted video format on video input 1 improved robustness. Video input 1 is now restricted to have the same video format (PAL/NTSC) as the video output (or the system software). IE. If system software is NTSC only NTSC camera can be connected to video input 1. All other sources have auto detection of PAL/NTSC. • Keep request video intra updates (Fast update requests) until a full intra has been received	
C3.2 *Nov 1999*	**H.320** • New network error feedback ('Network error: Corrupted incoming data') • Included Sending Complete for Taiwan ISDN Protocol • Detecting B-channel loopback, detect a loop of any channel and downspeed the channels. • Improved feedback for network errors. • Detection of temporary network loop automatically	
C3.1 *July 1999*	**MANAGEMENT** Support of the TANDBERG Trackers.	*TANDBERG Trackers*
C3.0 *Apr 1999*	**H.320** • New PRI protocols: ATT 5ESS, DMS 100, DMS 250 (V5000 only) **USER INTERFACE** • Web-interface for diagnostics and management, IE4, Netscape	Introduction of V2500

SW VERSION & DATE	FEATURES	COMMENTS
	• Do not disturb • Screen saver for 2nd monitor's selfview • Better indication of disabled FECC/Preset Activate (beep). **MANAGEMENT** • Dataport functionality via Ethernet, TCP/IP, Telnet • Software upgrades via Ethernet, ftp • Camera tracking version 1.2 • Multiple camera control • Improved feedback on dataport (as is available in the dataport 'statin'/'statout'). • Dataport feedback for call status information.	
C2.0 *Nov 1998*	**H.320** • Cascaded PRI (V5000 only) • Calling one 384 kbps channel - H_0. • Fallback to telephony • Auto detection of National ISDN1 • Copy of numbers in ISDN Line Setup • Support of restrict BONDING downspeed **USER INTERFACE** • NetMeeting 2.1 support • Disabling all On-screen feedback • Still image removed after call is disconnected • Different LED appearance between Basic and Advanced Call Quality **AUDIO** • Adaptive/automatic mixing of audio in 1-4 (1-2 on V800 and V2500). The two other inputs have fixed mixing. • VCR ducking/attenuation. • Audio level meters • Received AGC set to Off as default in menu	Introduction of V800
C1.3 *July 1998*	**H.320** • ISDN BRI up to 512 kbps (4 BRI interfaces) • ISDN PRI up to 768 kbps External network up to 768 kbps **EXTERNAL NETWORKS** • External network up to 768 kbps **AUDIO** • Loads of audio settings (AGC, levelling) • Fixed mixing of audio in 1-6 inputs • Internal audio mixer, 4 echo cancellers, Natural Audio Module	Introduction of V5000 *Vision5000 SoftMux -* ISDN BRI 512 kbps, ISDN PRI 768 kbps, Ext net 768 kbps New parts: *TANDBERG Natural Audio Module* *Audio Science Microphone*

SW VERSION & DATE	FEATURES	COMMENTS
	<u>VIDEO</u> • New camera (190 degree pan, wide angle lens, WAVE)	*WAVE camera*

MasterVision 2000/ Master Vision 6000i/ Vision 2000 etc

SW VERSION & DATE	FEATURES	COMMENTS
B4.3 *Feb 2000*	**USER INTERFACE** The main feature is better ways of detecting network errors. • Network loop detection, detects if any of the B-channels are looped by the network. • Message: 'Incoming video corrupted' when corrupted data (not just No incoming video). **MANAGEMENT** • 'Statin' command on dataport	
B4.2 *April 1999*	**USER INTERFACE** • NetMeeting 2.1 support implemented. • Still image removed after disconnect	
B4.1 *Oct 1998* & **B4.0** *Sept 1998*	**H.320** • All ISDN protocols incorporated in a single software version **MULTISITE** • Shortcut to MCU menu (menu +2) **USER INTERFACE** • 99 entries in directory list, alphabetical sort • Support for 15 presets (local and far end) • Selfview improved because of removed video filter **SECURITY** • Network Setup locking • Password protection on Network Setup • KG194 Encryption support **MANAGEMENT** • Factory-installed set-up **AUDIO** • Reduced video/audio delay with up to 35% **VIDEO** • Intelligent Video Management (Sharpness/Normal/Motion) • Reduced video/audio delay with up to 35% • Change auto switch h.261 to h.263 to 256 kbps • 4 CIF Selfview outside a call • 4 CIF still image H.263 • Expanded non-TANDBERG camera support. • Visca camera-control protocol support (e.g. Sony EVI-D30/31)	WAVE camera Only two software variants (PAL/NTSC) ISDN BRI 128 kbps & 384 kbps External Net 384 kbps Remote control Changes: Green send button, Red disconnect button.

SW VERSION & DATE	FEATURES	COMMENTS
B3.1 *Sep 1997* & **B3.0** *Aug 1997*	**H.320** • Auto-select data rate for leased lines • Auto-select between BONDING & H.221 • 6B-H0 Capability • Incoming parallel dial fix. • Easy two-number dialling. • Solve TEI issue (problem in France). **USER INTERFACE** • On-the fly network selection • Presentation setting mode • Still images on monitor 2. • Swedish user interface **MANAGEMENT** • Call status feedback on data port. • Double B-side detection. • Feedback on all Parameters • Display of all Parameters (dispparam) **AUDIO** • Possibility to turn off lip synchronisation. **VIDEO** • Reduced video delay • Non-TANDBERG camera support	Three products: *Vision2000 SoftMux* - ISDN 384 kbps, Ext net 384 kbps *Vision2000 128* - ISDN 128 kbps, Ext net 128 kbps *Vision2000 384* – ISDN 128 kbps, Ext net 384 kbps

SW VERSION & DATE	FEATURES	COMMENTS
B2.2 *Mar 1997* & **B2.1** *Feb 1997* & **B2.0** *Dec 1996*	B2.0 contained all the new functionality, with subsequent 2.1 and 2.2 releases essentially improvements. B2.0 was first shown at TeleCon in Anaheim, October 1996. **H.320** • T.120 • New ISDN protocols (Japanese, Australian/Taiwan etc) **MULTISITE** • Transparent MCU menu **USER INTERFACE** • Shortcut to Call status (menu +1) • German, Norwegian, French user interface • 10 local and far-end presets using new camera in old housing (Camera Unit II) **VIDEO** • H.263 - first in market • One-touch still image transfer (4CIF still image) • Camera adjustments (brightness, backlight, white balance)	
B1.0 *May 1996*	**H.320** • SoftMux => first in market, no external IMUX • Downspeeding (TANDBERG ⇔ TANDBERG) • New ISDN protocols (Japanese, Australian/Taiwan) **MULTISITE** • H.243 Chair control, full implementation **USER INTERFACE** • Call status menu • Intelligent Call Management **MANAGEMENT** • Remote diagnostic **VIDEO** • 4CIF Still Image (H.261 Annex D)	Two products : *MasterVision6000i* - ISDN 384 kbps, no support for external networks *MasterVision2000* - ISDN 128 kbps
A2.2 *Feb 1997*	**H.320** • T.120 **VIDEO** • H.263 • 4CIF Still Image	This software was built to add features from the *MasterVision6000i* to the *MasterVision6000*

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SW VERSION & DATE	FEATURES	COMMENTS
A2.1 *Sep 1996* & **A2.0** *June 1996*	**USER INTERFACE** • H.281 Far End Camera Control. Note that there was no *MasterVision2000* release from A2.0 and onwards.	One product : *MasterVision6000* - ISDN 128 kbps, Ext Net 384 kbps Several country variants available
A1.1 *Nov 1995* & **A1.0** *Oct 1995*	First TANDBERG product to do 384 kbps (with external IMUX though, Ascend/Promptus) **MULTISITE** • H.243 MCU Chair Control services **USER INTERFACE** • English	Two products: *MasterVision2000* - ISDN 128 kbps, Ext Net 128 kbps *MasterVision6000* - ISDN 128 kbps, Ext Net 384 kbps Several country variants available for both versions

Vision 600/ Vision 770/ Vision 1000

SW VERSION & DATE	FEATURES	COMMENTS
B1.3 *Dec 1998*	**Changes from B1.1 do not require any documentation changes.**	
B1.2 *June 1998*	**EXTERNAL NETWORKS** • X.21 interface on Vision **AUDIO** • Increased network audio levels with 6 dB • Special to V600 (i.e. not on 770/1000)	
B1.1 *Jan 1998*	**AUDIO** • New setting in the Audio setup => VCR on/off • Local VCR playback (can hear local audio and can talk on top of the video - make comments for the other side) **VIDEO** • Intelligent Video Management	Three products : *Vision 600/770/1000* ISDN BRI 128, Ext net 128
A1.0 *Feb 1997*	**H.320** • T.120 Data conferencing for file transfer and application sharing • Downspeeding • Analogue telephone access **MULTISITE** • H.243 MCU capabilities (Chair Control) **USER INTERFACE** • Call status reporting • Movable PIP • Autoanswer • 10 Local/Far-end presets • Caller ID and speed dial directory (49 entries) • H.281 Far End Camera Control **MANAGEMENT** • Local/Remote system and network diagnostics **AUDIO** • Full duplex audio **VIDEO** • H.263 • Still image display, H261 Annex D	Three products : *Vision 600/770/1000* ISDN BRI 128

Appendix

Prefixes on TANDBERG products

PREFIX[9]	MODEL NAME	BRAND NAME / COMMENTS	LIFETIME	SOFTWARE VERSIONS AVAILABLE
01	*TANDBERG Natural Audio Module*	*Supported on Vision 5000 & TANDBERG6000/7000/8000*	*July 1998 ➡ Feb 2002*	
02	**TANDBERG Remote Control II**	**Replaced the Vision remote control (available only on TANDBERG platform)**	**Feb 2000 ➡**	**A1 ➡ A2, B1 ➡ B7/E2**
03	**TANDBERG Natural Audio Module II**	**Supported on T6000, T7000 and T8000**	**Feb 2002 ➡**	**B4 ➡ B7/E2**
05	*Compact Vision*		*1994 ➡ 1996*	*A1 ➡ A2.2*
07	*Vision 800*	*MV6000S[10]*	*Nov. 1998 ➡ July 2000*	*C2 ➡ C4*
08	*TANDBERG 800*	*MV6000SC[10]* *Replaced the Vision 800*	*July 2000 ➡ July 2002*	*A2, B1 ➡ B7.3*
09	*TANDBERG 500*		*Oct 2000 ➡ July 2002*	*B1 ➡ B7.3*
10	*Vision Classic*	*Visitel 10, VC7000[11], BTVS*	*1991 ➡ 1995*	*H, J, K*
11	*Vision 600/770*	*VS1/ VS101*	*Oct 1996 ➡ Dec 1998*	*A1, B1 ➡ B1.3*
13	**TANDBERG 1000**	*TANDBERG 1000[12]*	*Feb 2001 ➡ Nov 2002*	*B2 ➡ B7.3*
		With Wireless LAN support (from S/N: 13.03000)[12]	*Oct 2001 ➡ Nov 2002*	
		With Camera focus ring (from S/N: 13.05143) [12]	*July 2001 ➡ Nov 2002*	
		With Privacy function (from S/N: 13. 07000) [13]	**Nov 2002 ➡**	**B5.11, E1.1 ➡ E2.3**
15	*Grand Vision (GV)*	*(also Surveillance codec), Visitel 15*	*1992 ➡ 1995*	*K*
16	*Camera Unit I & II*	*Unit II from 16.10000*	*1995 ➡ July 1998*	*GV/V770/Codec1000/2000*
17	*Codec 1000*	*Codec 1000, Vision 1000*	*Oct 1996 ➡1999*	*A1, B1 ➡ B1.3*
18	*Camera WAVE*		*July 1998 ➡ Jan. 2003*	*V2000 (B4 only) /V5000/V2500 + TANDBERG platform*
19	**Camera WAVE II**	**Replaces the WAVE camera**	**Jan. 2003 ➡**	**B6.1/E1.1 ➡ B7.3/E2.3**

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[9] E.g.. 01.01234, typically 2 digits prefix with 5 digits suffix.

[10] MV (MasterVision) and Visitel are terms of Tenovis units (the name MasterVision was also the official TANDBERG name for codec 2000 until B3 software when it changed to Vision).

[11] VC7000, VS and BTVS are terms of BT units

[12] Supports only B7, B6 & B5.1 softwares. E2, E1 & B5.11 softwares are only available on the enhanced codecs T1000.

[13] Requires modified codec T1000 and B5.11 software (Privacy function not available in B5.1)

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20 (a)	*Codec 2000*	*VS2[11]*	*Oct 1995 ➡ July 1999*	*A1 ➡ A2.2, B1 (SoftMux) ➡ B4.3*
20 (b)	*Codec 2500 (Vision)*	*MV6000 Basis, with Ethernet port[10]*	*1999 ➡ 2000*	*C3 ➡ C4*
21	*Codec 5000*	*VS2Premier[11], VS2Premier+[11] MV8000[10]*	July 1998 ➡ 2000	*C1 ➡ C4*
22	**Codec 6000[14]**	*TANDBERG 6000 (also known as MV9000)*	***Feb 2000 ➡ Nov 2002***	***A1 ➡ A2.5, B1 ➡ B7.3***
		TANDBERG 6000 (from S/N: 22.30000): enhanced graphics codec (XGA support)	**Nov 2002 ➡**	**B5.11, E1.1 ➡E2.3**
		TANDBERG 7000 (also known as MV9500[10]) old platform with 40" plasma monitors	*Feb 2000 ➡ July 2002*	*A1 ➡ A2.5, B1 ➡ B7.3*
		TANDBERG 7000: new platform with 30" LCD monitors	**April 2003 ➡**	**E1.1 ➡ E2.3**
		TANDBERG 8000	**Oct 2001 ➡**	**B6.1/E1.1[15] ➡ B7.3/E2.3**
23	**Codec 2500[15]**	*MV6000C Basis[10]*	*July 2000 ➡ Nov 2002*	*A2 ➡ A2.5, B1 ➡ B7.3*
		TANDBERG 2500 (from S/N: 23.30000): enhanced graphics codec (XGA support)	**Nov 2002 ➡**	**B5.11, E1.1 ➡ E2.3**
28	**TANDBERG MCU**	**2 software versions: 8+8, and 16+16**	**July 2002 ➡**	**D1 ➡ D3**
29	**TANDBERG GATEWAY**	**2 software versions: 2Mb and 4Mb ISDN version**	**July 2003 ➡**	**G1 ➡ G2**
30	**TANDBERG 880[15]**	**Replaces TANDBERG 800**	**Feb 2002 ➡**	**B4 ➡ B5.11, E1.1[15] ➡ E2.3**
30	**TANDBERG 880 IP Only**	**TANDBERG 880 IP only: 768 Kbps on H.323**	**June 2003 ➡**	**E1.3 ➡ E2.3**
31	**TANDBERG 550[15]**	**Replaces TANDBERG 500**	**April 2002 ➡**	**B4 ➡ B5.11, E1.1[15] ➡ E2.3**
32	**TANDBERG 880 NET**	**TANDBERG 880 with External Networks & IP**	**Mai 2002 ➡**	**B4.4 ➡ B5.11, E1.1[15] ➡ E2.3**
52	**new rollabout TANDBERG 6000**	**52.xxxxx designs the TANDBERG 6000 with new rollabout and XGA support**	**Jan 2003 ➡**	**E1.1[15] ➡ E2.3**
53	**new rollabout TANDBERG 2500**	**53.xxxxx designs the TANDBERG 2500 with new rollabout and XGA support**	**Jan 2003 ➡**	**E1.1[15] ➡ E2.3**

Items marked in Bold are available on the current price list.
Items marked in Italic and with grey background are products "out of production"

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[14] Codec 6000 is common on T6000, T7000 and T8000. The enhanced codecs 6000 start from S/N: 22.30000

[15] E2, E1 & B5.11 softwares are available on T550, T880, and on the enhanced codecs T1000, T2500, T6000, T7000, T8000.