

Initial configuration

Vega 100 T1 (H.323)

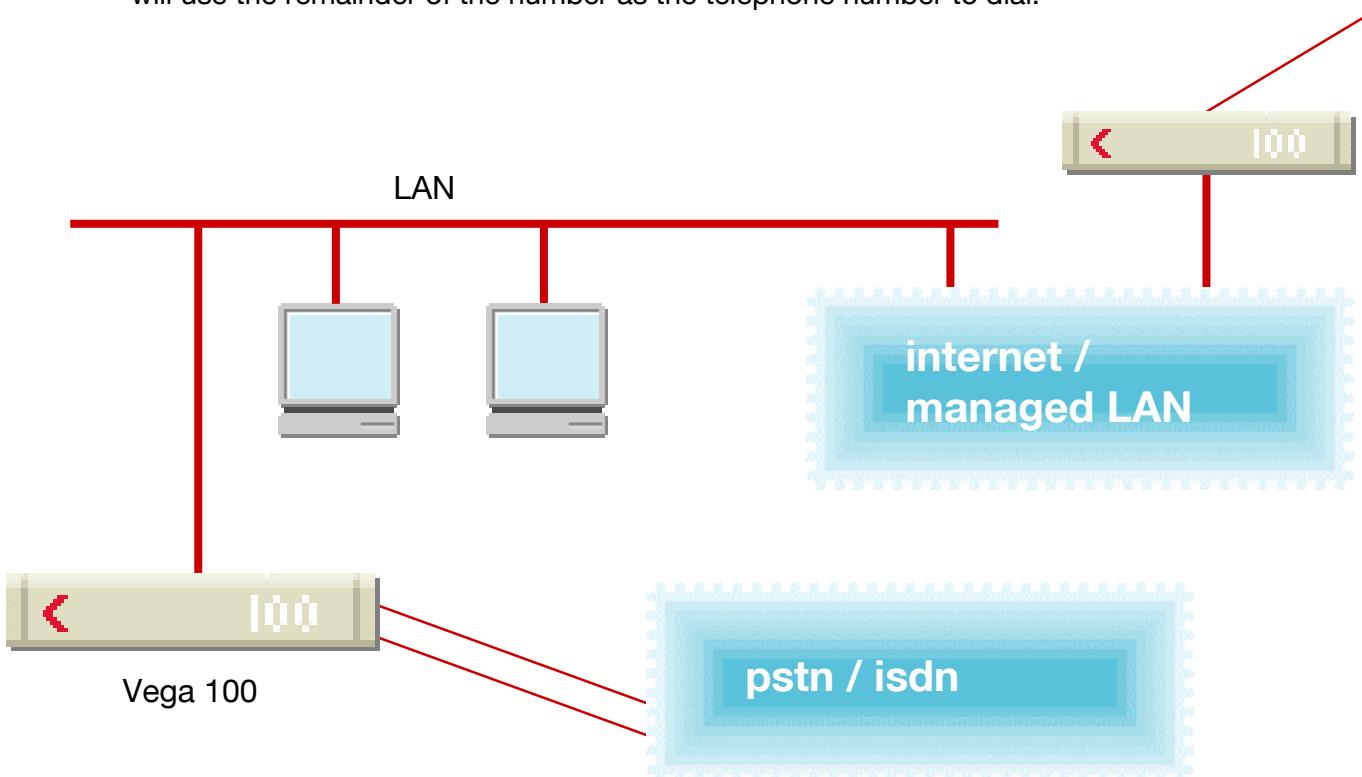
Standalone mode – R5.1



This document describes how to configure the Vega 100 T1 H.323 unit using the web browser interface. The configuration described will allow the Vega to be rapidly installed and tested.

The instructions below will configure the Vega 100 to be a trunking gateway routing all telephony calls it receives to a specified IP address (typically a partner gateway). It will also route all calls it receives from the VoIP interface to the telephony interfaces. Specifically the Vega will be configured to act as follows:

- For calls received from the telephony interface, the Vega will prefix the dialled number with the interface ID that the call arrived on (so that this can be used to route the call at the destination gateway).
- For calls received over the VoIP interface, the Vega will take the first 2 digits of the supplied telephone number and use these to select the trunk to route the call through. It will use the remainder of the number as the telephone number to dial.



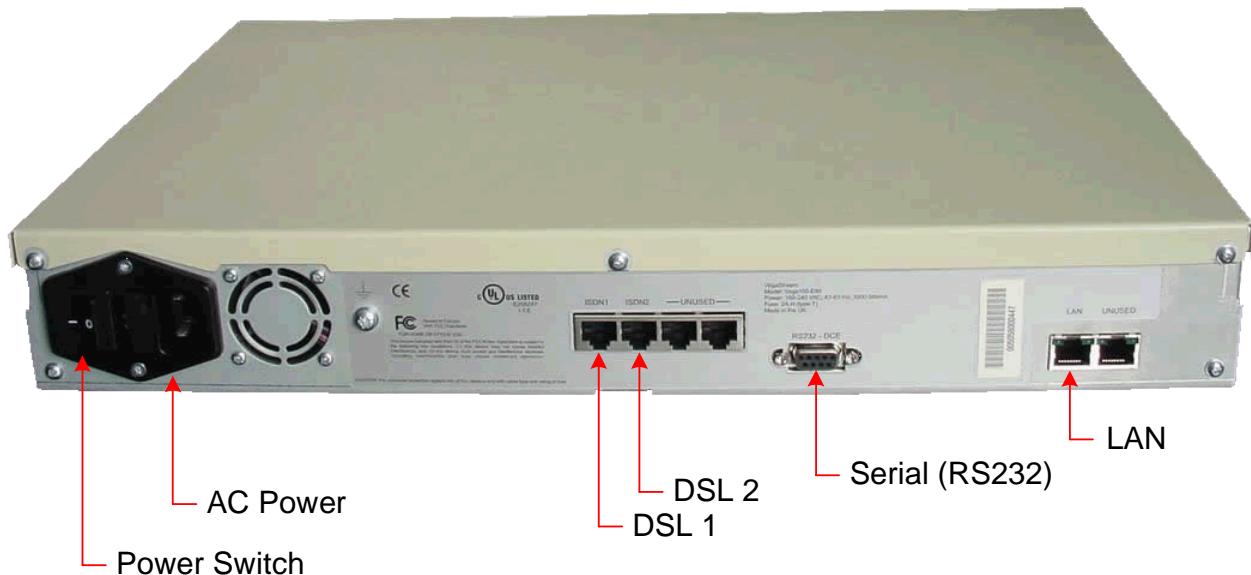
The configuration process is broken down into 11 stages as follows:

- 1 Connect your Vega to LAN, Telephone and Power
- 2 Configure the basic LAN parameters
- 3 Configure password and login timeout
- 4 Check and configure LAN settings and Host name
- 5 Configure H.323 parameters
- 6 Configure the Dial Plan
- 7 Configure audio parameters
- 8 Configure DSLs
- 9 Configure pointer to CD ROM documentation
- 10 Save Changes
- 11 Archive Vega Configuration

Please also see:

- 12 Technical Support
- 13 Advanced configuration

1. Connect your Vega to LAN, Telephone and Power



Before installing your Vega, ensure that you read the VegaStream VoIP Gateways Safety and Compliance Information document.

LAN:

Using the yellow booted cable connect the LAN port on the Vega [5] to a standard or fast Ethernet hub or switch (10 baseT or 100 baseTx). The connector nearest the ferrite core should be plugged into the Vega.

Telephony:

Connection to a PBX

- If you are connecting the Vega 100 to a PBX, the Vega 100 acts as the NeTwork equipment and a red-booted cable must be used.

For each trunk that is to be connected to the PBX, insert one end of a red booted cable into one of the Vega 100 DSL sockets [DSL 1 or DSL 2] and the other end to the PBX.

Connection to the PSTN

- If you are connecting the Vega 100 directly to the public telephone network it acts as the Terminal Equipment and the blue-booted cable must be used.

For each trunk that is to be connected to the PSTN, insert one end of a blue booted cable to one of the Vega 100 DSL sockets [DSL1 or DSL2] and the other end to the PSTN terminating box.

Power:

Insert the power cable into the AC power inlet on the Vega and switch on. The power LED on the front panel will illuminate.

The LAN LEDs will also illuminate indicating 10 (baseT) or 100 (baseTx) connection, and the FDX LED will illuminate if Full Duplex mode has been negotiated.

2. Configure the basic LAN parameters

If a DHCP server is available, by default, the Vega will automatically pick up an IP address. If you know the IP address served to the Vega, skip this section and start at [3](#).

If DHCP is not to be used to provide the Vega with an IP address, or you need to check the IP address provided to the Vega, connect the serial interface of the Vega to a PC serial interface using a 9 way male to female straight through cable.

Configure a terminal emulator program (such as Microsoft's HyperTerminal) for:

- Speed = 115200 baud
- Data bits = 8
- Parity = none
- Stop bits = 1
- Flow Control = none

Press <Enter> to get the Username: prompt

At the prompts enter the default user name and password

Username: admin

Password: admin

To display the current IP address, type:

➤ show lan.ip

If this is not the IP address required, it can be overridden, together with other LAN parameters by typing:

➤ set lan.use_dhcp=0
➤ set lan.ip=aaa.bbb.ccc.ddd
➤ set lan.subnet=eee.fff.ggg.hhh
➤ set lan.gateway=iii.jjj.kkk.l11
➤ save
➤ reboot system

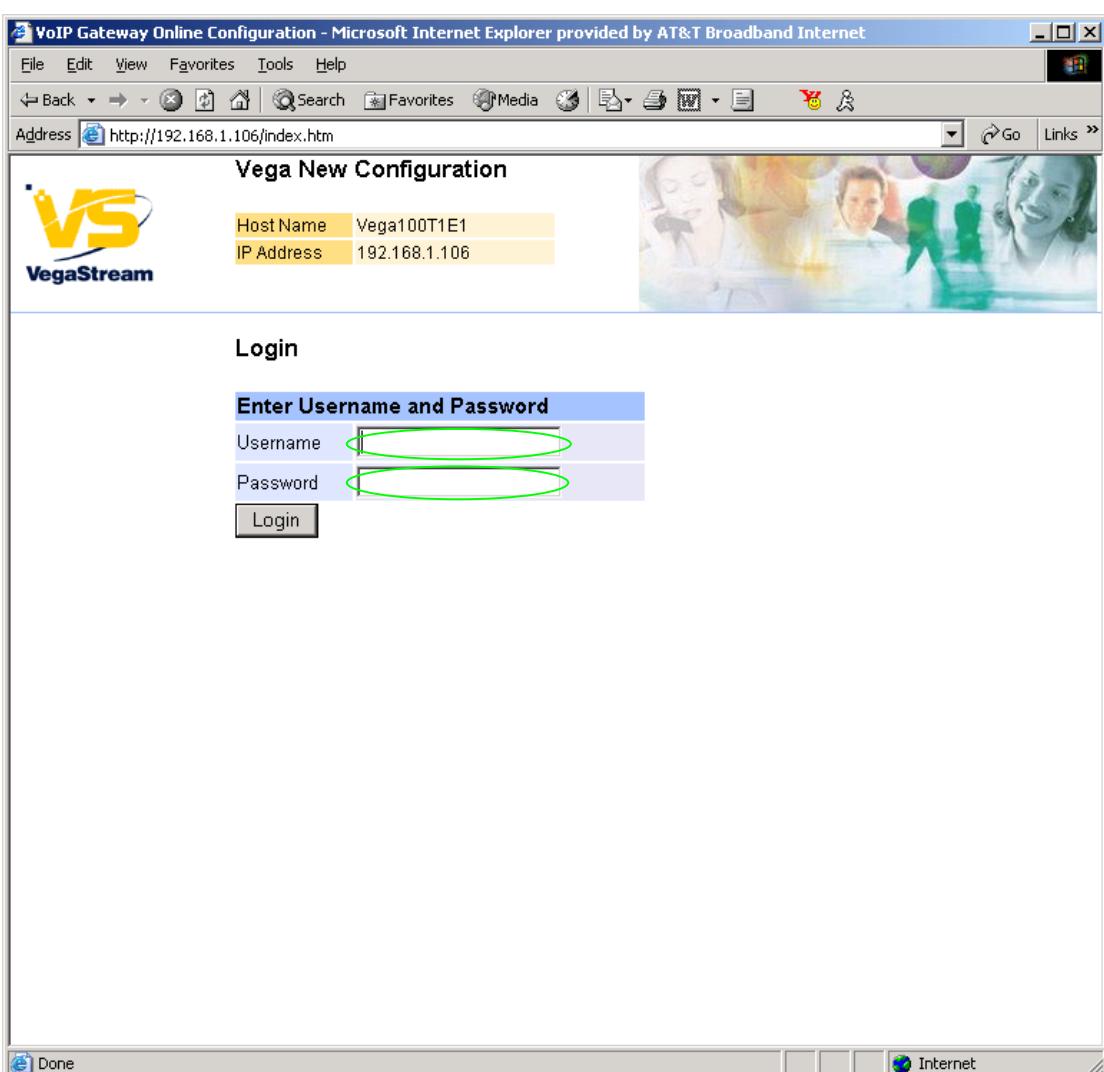
3. Configure password and login timeout

Now configuration will be carried out via a web browser.

- Enter the IP address of the Vega into the “Address” field of your web browser.



You will then be presented with the login page:



Enter the default Username and Password

- Username: admin
- Password: admin
- Select

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=2032057877&frame_id=6

Vega 100 Configuration

VegaStream

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

Management ◀ **System Management**

Tip: Place the cursor of the mouse on name or input fields to get concise help.

Quick Configuration Wizard

Quick step by step essential configuration

System Time

Set Time (hh:mm:ss) : :

Set Date (dd/mm/yyyy) / /

Synchronise Time and Date With PC With NTP server

Call Reports

Report call progress summary
Report on all call progress statistics

System Logs

Show the Event Log
Show the Billing Log

Call Control

All further calls are

➤ On the left hand side menu select [Users](#)

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=2032057877&frame_id=27

Vega 100 Configuration

VegaStream

Host Name	Vega100T1E1
IP Address	192.168.1.106
User Name	admin

Management

Logging

Maintenance

LAN

DSL

H.323

Dial Plan

Media Channels

Tones

Users

QoS

Advanced

Users

Administrator

Logging	3
Billing	0
Prompt	%u%p>
Remote Access	1
Timeout	240

Submit

Administrator Password

New Password	<input type="text"/>
Re-enter Password	<input type="text"/>

Submit

Billing User

Logging	0
Billing	1
Prompt	%u%p>
Remote Access	1

Save

Log off

Help

Reboot System

Internet

Recommended: Change the password

- enter New Password and Re-enter Password then
- select **Submit** and then click “[here](#)” to return

Optional: Change the timeout¹ – default is 240 seconds; can extend to 7200 seconds (2hrs)

- select **Submit** and then click “[here](#)” to return

¹ If the web interface is not used for this length of time the Vega will automatically log off the session. This change is only activated by logging out and back into the browser session.

4. Check and configure LAN settings and Host name

➤ On the left hand side menu select [LAN](#)

The screenshot shows the Vega 100 T1E1 Online Configuration interface in Microsoft Internet Explorer. The main title bar reads "Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer". The address bar shows the URL "http://192.168.1.106/vsframe?sid=2032057877&frame_id=1". The left sidebar contains a navigation menu with links: Management, Logging, Maintenance, LAN (which is selected), DSL, H.323, Dial Plan, Media Channels, Tones, Users, QoS, and Advanced. Below the menu are buttons for Save, Log off, Help, and Reboot System. The main content area is titled "Vega 100 Configuration" and displays host name, IP address, and user name fields. A warning message "Unsaved Configuration Changes" is shown with a yellow exclamation mark icon. The "Local Area Network (changed)" section is expanded, showing the "Current Mode: Standard Ethernet Mode" (selected) and "Change to VLAN (8021q) Ethernet mode". The "LAN Configuration" section is also expanded, showing various network parameters like Host Name, IP Address, Subnet Mask, Domain Name Server, Default Gateway, TFTP Server, Network Time Server, FTP Server, NTP Offset, and NTP Poll Interval, each with a "Use DHCP" checkbox. The "Physical Layer Configuration" section is partially visible below.

➤ Scroll down to see the whole of the **LAN Configuration** section

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=2032057877&frame_id=1

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

VS VegaStream

Management
Logging
Maintenance
LAN ◀
DSL
H.323
Dial Plan
Media Channels
Tones
Users
QoS
Advanced

LAN Configuration

Use DHCP	<input checked="" type="checkbox"/>	
Host Name	Vega100T1E1	
IP Address	DHCP defined	
Subnet Mask	DHCP defined	
Domain Name Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
Default Gateway	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
TFTP Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
Network Time Server	DHCP defined	Use DHCP <input checked="" type="checkbox"/>
FTP Server	192.168.1.108	
NTP Offset (hhmm)	0000	
NTP Poll Interval	0	

Physical Layer Configuration

Full Duplex	<input type="checkbox"/>
Ethernet Type	10baseT & 100baseTX
QoS profile	1

Lan Hosts

Save **Log off** **Help** **Reboot System** **Submit**

Optional: If there are any LAN values that need to be set up (e.g. NTP server or tftp server) set them up now, then

➤ Select **Submit** and then click “[here](#)” to return

5. Configure H.323 parameters

➤ On the left hand side menu select [H.323](#)

The screenshot shows the Vega 100 T1E1 Online Configuration interface in Microsoft Internet Explorer. The main menu on the left includes options like Management, Logging, Maintenance, LAN, DSL, H.323 (which is selected), Dial Plan, Media Channels, Tones, Users, QoS, and Advanced. The H.323 configuration page has a header 'Vega 100 Configuration' with fields for Host Name (Vega100T1E1), IP Address (192.168.1.106), and User Name (admin). A warning message 'Unsaved Configuration Changes' is displayed. The main content area shows the 'Current Mode: Standalone Mode' and the 'H.323 LAN Configuration' section. The 'H.323 LAN Configuration' section contains the following settings:

Interface ID	05
Cost Index	1
Maximum Calls	60
Default Gateway	0.0.0.0
Use Fast Start	<input checked="" type="checkbox"/>
Accept Fast Start	<input type="radio"/> no <input checked="" type="radio"/> after connect <input checked="" type="radio"/> after alert <input type="radio"/> after proceeding
H245 After Fast Start	<input checked="" type="checkbox"/>
Use Early H245	<input type="checkbox"/>
Accept Early H245	<input checked="" type="checkbox"/>
Use H245 tunnelling	<input checked="" type="checkbox"/>
Accept H245 tunnelling	<input checked="" type="checkbox"/>
Setup Mapping	1
QoS profile	0

At the bottom of the configuration page are 'Save', 'Log off', 'Help', and 'Reboot System' buttons, along with a 'Submit' button.

If this Vega is to be inter-working with another Vega leave the **H.323 LAN Configuration** alone, if it is to work with other manufacturer's devices, it is often best to untick the indicated items – as these are advanced H.323 features that are not always supported by other manufacturers. Once the Vega and the other device are working in the basic H.323 mode, try enabling other features – back towards this configuration, as this will improve call setup times.

6. Configure the Dial Plan

➤ On the left hand side menu select [Dial Plan](#)

The screenshot shows the Vega 100 T1E1 Online Configuration interface in Microsoft Internet Explorer. The left sidebar contains navigation links: Management, Logging, Maintenance, LAN, DSL, H.323, Dial Plan (which is selected), Media Channels, Tones, Users, QoS, and Advanced. The main content area is titled "Vega 100 Configuration". It displays host information (Host Name: Vega100T1E1, IP Address: 192.168.1.106, User Name: admin) and a warning about unsaved changes. Below this is the "Dial Planner" section. The "Profiles" table lists one profile:

Del?	ID	Profile ID	Enabled	Name	Plans	Chg?
<input type="checkbox"/>	1	1	1	Vega100T1E1_default	====>	Modify

Below the profiles is the "Planner Groups" table:

Del?	ID	Name	Cause	Lan	Gatekeeper	Active times	Priority	Chg?
<input type="checkbox"/>	1	Default	0	off	off	0000-2359	0	Modify

Buttons for Delete and Add are present. Further down are sections for "Planner Whitelist Enable" (checkboxes for Use Whitelist and Submit) and "Planner Whitelists" (table with one entry). Buttons for Save, Log off, Help, Reboot System, and Apply Changes are located on the left.

Firstly, turn off the default profile:

In the **Profiles** section, Profile ID 1

➤ Select [Modify](#)

Dial Planner > Profile 1

Modify Profile	
Profile ID	1
Enabled	<input checked="" type="checkbox"/>
Name	Vega100T1E1_default
<input type="button" value="Submit"/>	

- disable (un-tick) Enabled, then
- select and then click “[here](#)” to return

Now create a new profile and in it create a dial plan entry to handle calls being sent from ISDN to the LAN:

Dial Planner

Profiles						
Del?	Profile ID	Enabled	Name	Plans	Chg?	
<input type="checkbox"/>	1	0	Vega100T1E1_default	==>	Modify	<input type="button" value="Delete"/>
	<input type="button" value="Add"/>					

In the **Profiles** section

- Select

Dial Planner

Profiles						
Del?	Profile ID	Enabled	Name	Plans	Chg?	
<input type="checkbox"/>	1	0	Vega100T1E1_default	==>	Modify	<input type="button" value="Delete"/>
<input type="checkbox"/>	2	1	new_profile	==>	Modify	<input type="button" value="Add"/>
	<input type="button" value="Delete"/>	<input type="button" value="Add"/>				

In the **Profiles** section, on Profile 2 (the new profile):

- Select [Modify](#)

Dial Planner > Profile 2

Modify Profile	
Profile ID	2
Enabled	<input checked="" type="checkbox"/>
Name	<input type="text" value="new_profile"/>
<input type="button" value="Submit"/>	

- Set Name = ISDN_To_LAN
- select and then click “[here](#)” to return

Dial Planner

Profiles						
Del?	Profile ID	Enabled	Name	Plans	Chg?	
<input type="checkbox"/>	1	0	Vega100T1E1_default	====>	Modify	
<input type="checkbox"/>	2	1	ISDN_To_LAN	====>	Modify	
Delete Add						

In the **Profiles** section, on Profile 2 (the ISDN_To_LAN profile):

- Select [Modify](#)

[Dial Planner](#) > [Profile 2](#)

Modify Profile

Profile ID	2
Enabled	<input checked="" type="checkbox"/>
Name	ISDN_To_LAN
Submit	

Plans in this Profile							
Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
<input type="checkbox"/>	1	new_plan	TEL:<.,><*>	IF:<1>,TEL:<2>	0	0	Modify
Delete Add							

In the **Plans in this Profile** section:

- Select [Modify](#)

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Home Search Favorites Media Stop Refresh Stop Go Links

Address: http://192.168.1.106/vsframe?sid=2032057877&frame_id=35

Vega 100 Configuration

Host Name: Vega100T1E1
IP Address: 192.168.1.106
User Name: admin

VS VegaStream

Management **Dial Planner > Profile 2 > Plan 1**

Modify Plan

Plan ID	1
Profile ID	2
Name	new_plan
Source	TEL:<.><*>
Destination	IF:<1>,TEL:<2>
Cost Index	0
Group	0 - no group

Apply **Generate Prefix Match**

Regular Expressions for Source

.	Any character
[...]	Any character within the parentheses
[x-y]	Any character in the range x-y
[^...]	Any character except those within the parentheses
*	The character before repeated zero or more times
+	The character/expression before repeated one or more times
?	The character/expression before repeated zero or more times
\	The character following is taken literally
<...>	Capture the sequence in parentheses and store as <n> where n is the nth occurrence of <> in the source expression

Save **Log off** **Help** **Reboot System** **Apply Changes**

Done **Internet**

- Set Name = From_ISDN
- Set Source = IF:<. [^5]>, TEL:<.*> *(This takes a call from either of the two ISDN interfaces and stores the interface number in store <1> and the telephone number presented in store <2>)*
- Set Destination = IF:05 , TEL:<1><2> *(This routes the call to IF:05 (the LAN) and passes the received telephone number prefixed by the 2 digit received interface number, on as the destination telephone number)*
- select **Apply** and then click "[here](#)" to return

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=1224785965&frame_id=36 Go Links >

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

VS VegaStream

Unsaved Configuration Changes

Dial Planner > Profile 2

Modify Profile

Profile ID	2
Enabled	<input checked="" type="checkbox"/>
Name	ISDN_To_LAN

Submit

Plans in this Profile

Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?
<input type="checkbox"/>	1	From_ISDN	IF:<.[^5]>,TEL:<.*>	IF:05,TEL:<1><2>	0	0	Modify

Delete **Add**

Save 

Log off

Help

Reboot System

Done Internet

➤ On the left hand side menu select [Dial Plan](#)

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Home Search Favorites Media Stop Refresh Stop Go Links

Address: http://192.168.1.106/vsframe?sid=2032057877&frame_id=35

Vega 100 Configuration

Host Name: Vega100T1E1
IP Address: 192.168.1.106
User Name: admin

VS VegaStream

⚠️ Unsaved Configuration Changes

Dial Planner

Profiles

Del?	Profile ID	Enabled	Name	Plans	Chg?
<input type="checkbox"/>	1	0	Vega100T1E1_default	====>	Modify
<input type="checkbox"/>	2	1	ISDN_To_LAN	====>	Modify

[Delete](#) [Add](#)

Planner Groups

Del?	ID	Name	Cause	Lan	Gatekeeper	Active times	Priority	Chg?
<input type="checkbox"/>	1	Default	0	off	off	0000-2359	0	Modify

[Delete](#) [Add](#)

Planner Whitelist Enable

Use Whitelist	<input type="checkbox"/>
---------------	--------------------------

[Submit](#)

Planner Whitelists

Del?	ID	Name	Number	Chg?
<input type="checkbox"/>	1	default	IF:.*	Modify

[Delete](#) [Add](#)

[Save](#)

[Log off](#)

[Help](#)

[Reboot System](#)

[Internet](#)

Now create a new profile and in it create a dial plan entry to handle calls being received inbound from the LAN:

In a similar manner to adding profile 2 add another profile, profile 3,

➤ Set Name = LAN_to_ISDN

Modify the first plan for Profile 3:

➤ Set Name = From_LAN

➤ Set Source = IF:05,TEL:<..><.*>

(For calls from IF:05 (LAN), take the first two digits presented and store them in store <1>; take any further digits and store them in store <2>)

➤ Set Destination = IF:<1>,TEL:<2>

(The first two digits presented define the interface – 01 or 02 – and the remainder of the digits are passed on as the telephone number)

➤ select [Apply](#) and then click “[here](#)” to return

Note: *In this configuration, if a call comes in on trunk 1 of the Vega, it will be routed out of trunk 1 on the partner (destination) Vega. Similarly if it comes in on trunk 2 it will be routed out of trunk 2 on the destination Vega. The incoming telephone number is passed out of the destination Vega identically to the way it was received on the incoming Vega.*

For more details on the operation of the dial planner, including the various tokens that may be used, see the section “The Dial Planner” in the Vega Primer.

7. Configure audio parameters

- On the left hand side menu select [Media Channels](#)

The screenshot shows the Vega 100 T1E1 Online Configuration interface in Microsoft Internet Explorer. The main title bar reads "Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer". The address bar shows the URL: "http://192.168.1.106/vsframe?sid=2032057877&frame_id=24". The left sidebar contains a navigation menu with links: Management, Logging, Maintenance, LAN, DSL, H.323, Dial Plan, Media Channels (which is selected and highlighted in purple), Tones, Users, QoS, and Advanced. Below the menu are buttons for Save, Log off, Help, and Reboot System. The main content area has a header "Vega 100 Configuration" with fields for Host Name (Vega100T1E1), IP Address (192.168.1.106), and User Name (admin). A yellow warning icon indicates "Unsaved Configuration Changes". To the right of the configuration fields is a decorative background image of three people. The "Media Channels" section is expanded, showing two tables: "Codec Configuration" and "H.245 Capabilities". The "Codec Configuration" table lists several codecs: g729AnnexA, g729, g711Alaw64k, g711Ulaw64k, g7231, and T38. The "H.245 Capabilities" table lists five entries with checkboxes for Delete, ID, Name, and Chg?: 1 (g7231), 2 (g711Alaw64k), 3 (g711Ulaw64k), 4 (t38tcp), and 5 (t38udp). At the bottom of the "H.245 Capabilities" table, there are "Delete" and "Add" buttons, with "Add" being circled in green. The "H.245 Capability Descriptors" table below it lists three entries with checkboxes for Delete, ID, Description, Caps, and Chg?: 1 (voice, caps 1,2,3), 2 (t38Tcp, cap 4), and 3 (t38Udp, cap 5).

Add 2 more codecs so that by default the Vega will handle calls with any of the codecs it supports.

In H.245 Capabilities

- Select [Add](#)

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Home Search Favorites Media Stop Refresh Stop Go Links

Address: http://192.168.1.106/vsframe?sid=2032057877&frame_id=24

Vega 100 Configuration

Host Name: Vega100T1E1
IP Address: 192.168.1.106
User Name: admin

VS VegaStream

Management **Media Channels**

Logging

Maintenance

LAN

DSL

H.323

Dial Plan

Media Channels <

Tones

Users

QoS

Advanced

Save

Log off

Help

Reboot System

Apply Changes

Codec Configuration

- [g729AnnexA](#)
- [g729](#)
- [g711Alaw64k](#)
- [g711Ulaw64k](#)
- [g7231](#)
- [T38](#)

H.245 Capabilities

Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g711Alaw64k	Modify
<input type="checkbox"/>	3	g711Ulaw64k	Modify
<input type="checkbox"/>	4	t38tcp	Modify
<input type="checkbox"/>	5	t38udp	Modify
<input type="checkbox"/>	6	g7231	Modify

[Delete](#) [Add](#)

H.245 Capability Descriptors

Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3	Modify
<input type="checkbox"/>	2	t38Tcp	4	Modify

Done

In H.245 Capabilities

➤ Select [Add](#)

H.245 Capabilities

Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g711Alaw64k	Modify
<input type="checkbox"/>	3	g711Ulaw64k	Modify
<input type="checkbox"/>	4	t38tcp	Modify
<input type="checkbox"/>	5	t38udp	Modify
<input type="checkbox"/>	6	g7231	Modify
<input type="checkbox"/>	7	g7231	Modify

[Delete](#) [Add](#)

➤ Select [Modify](#) on H245 Cap ID 1

[Media Channels](#) > H.245 Capability 1

Modify Capability	
Capability ID	1
Name	<input type="text" value="g7231"/> g711Alaw64k g711Ulaw64k g7231 g729 g729AnnexA t38tcp t38udp
<input type="button" value="Submit"/>	

- Select required codec type – in this case g7231
- select and then click “[here](#)” to return
- Modify all H245 Cap ID entries until the list looks as follows:

H.245 Capabilities			
Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g729AnnexA	Modify
<input type="checkbox"/>	3	g729	Modify
<input type="checkbox"/>	4	g711Alaw64k	Modify
<input type="checkbox"/>	5	g711Ulaw64k	Modify
<input type="checkbox"/>	6	t38tcp	Modify
<input type="checkbox"/>	7	t38udp	Modify

Now update the Capability Description list that tells the Vega which codecs it can use.

H.245 Capability Descriptors				
Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3	Modify
<input type="checkbox"/>	2	t38Tcp	4	Modify
<input type="checkbox"/>	3	t38Udp	5	Modify

Update entry 1 to select all voice codecs, and the other entries to configure them for the correct capability IDs.

For each capability:

- Select [Modify](#)

- Adjust them so that they have the capabilities indicated below:

H.245 Capability Descriptors				
Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3,4,5	Modify
<input type="checkbox"/>	2	t38Tcp	6	Modify
<input type="checkbox"/>	3	t38Udp	7	Modify

- Scroll to the bottom of the Media Channels page:

Del?	H245 Cap ID	Name	Chg?
<input type="checkbox"/>	1	g7231	Modify
<input type="checkbox"/>	2	g729AnnexA	Modify
<input type="checkbox"/>	3	g729	Modify
<input type="checkbox"/>	4	g711Alaw64k	Modify
<input type="checkbox"/>	5	g711Ulaw64k	Modify
<input type="checkbox"/>	6	t38tcp	Modify
<input type="checkbox"/>	7	t38udp	Modify

Del?	ID	Description	Caps	Chg?
<input type="checkbox"/>	1	voice	1,2,3,4,5	Modify
<input type="checkbox"/>	2	t38Tcp	6	Modify
<input type="checkbox"/>	3	t38Udp	7	Modify

H.245 Preferred Index	
Preferred Index	<input type="button" value="0 - no preference"/>
Voice Capdesc Index	<input type="button" value="0 - no preference"/> (circled in red)
Fax Capdesc Index	<input type="button" value="2 - t38Tcp"/>
<input type="button" value="Submit"/>	

- Set Voice Capdesc Index to 1

H.245 Preferred Index	
Preferred Index	<input type="button" value="0 - no preference"/>
Voice Capdesc Index	<input type="button" value="0 - no preference"/>
Fax Capdesc Index	<input type="button" value="0 - no preference"/> 1 - voice 2 - t38Tcp 3 - t38Udp
<input type="button" value="Submit"/>	

- select and then click "[here](#)" to return

This has selected all voice codecs to be offered for all calls.

With Fax Capdesc Index set to “2 - t38Tcp” it has selected this codec for fax transfers. Note it is recommended that only a single T.38 codec is offered (as configured here), because if both are offered negotiations do not always complete correctly.

8. Configure DSLs

➤ On the left hand side menu select [DSL](#)

The screenshot shows the Vega 100 T1E1 Online Configuration interface in Microsoft Internet Explorer. The main title bar reads "Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer". The left sidebar contains navigation links: Management, Logging, Maintenance, LAN, **DSL**, H.323, Dial Plan, Media Channels, Tones, Users, QoS, and Advanced. The "DSL" link is highlighted. The main content area is titled "Vega 100 Configuration" and displays host information: Host Name (Vega100T1E1), IP Address (192.168.1.106), and User Name (admin). A warning icon indicates "Unsaved & Unapplied Changes". Below this is the "DSL Configuration" section, which includes fields for Network Type (set to ETSI), Network Topology (set to E1), Line Encoding (HDB3), Framing (CRC4), and Bus Master (1). A "Submit" button is present. To the right of the configuration is a decorative graphic of three people. At the bottom of the configuration section is a "PORT Configuration" table:

PORT ID	Enabled	NT	Clock Master	Layer 1	E1 rx Short Haul	T1 tx equalization	ISDN	CAS	Groups	Chg?
1	1	0	0	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify
2	1	1	1	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify

Buttons for Save, Log off, Help, Reboot System, and Apply Changes are located on the left side of the configuration area.

Start by selecting the correct Network Topology – T1

This is a zoomed-in view of the "DSL Configuration" section from the previous screenshot. It shows the following configuration:

Network Type	ETSI
Network Topology	E1
Line Encoding	E1
Framing	T1
Bus Master	1

The "Framing" dropdown is open, and the "T1" option is selected and highlighted with a green oval. A "Submit" button is at the bottom.

➤ In the **DSL Configuration** section select the required Network Topology = T1

In the **DSL Configuration** section select the Network Type as required:

DSL

DSL Configuration

Network Type	ETSI
Network Topology	ATT
Line Encoding	DMS
Framing	DMS_M1
Bus Master	NI
Submit	QSIG
	RBS
	AUTO

- ATT = 4ESS / 5ESS
- DMS = DMS 100
- DMS_M1 – not supported on H.323 products
- NI = National ISDN NI1 / NI2
- QSIG = QSIG
- RBS = CAS RBS (Robbed Bit Signalling)
- AUTO = DMS 100

Note: ETSI is not supported on the T1 interface.

In the **DSL Configuration** section select the Framing Method as required:

DSL

DSL Configuration

Network Type	NI
Network Topology	T1
Line Encoding	HDB3
Framing	CRC4
Bus Master	ESF
Submit	SF
	CRC4
	PCM30
	AUTO

- ESF = Extended Super-Frame – 16 state signaling
- SF = Super-Frame (also known as D4)
- AUTO = ESF

Note: CRC4 and PCM30 are not supported on the T1 interface

In the **DSL Configuration** section select the Line Encoding as required:

DSL

DSL Configuration	
Network Type	NI
Network Topology	T1
Line Encoding	HDB3
Framing	B8ZS
Bus Master	AUTO
<input type="button" value="Submit"/>	

- B8ZS = Bipolar with 8 zero substitution (forces line reversals regularly)
- AMI = Alternate Mark Inversion
- AUTO = B8ZS

Note: HDB3 is not supported on the T1 interface.

➤ select and then click "[here](#)" to return

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=2012645639&frame_id=7

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

VS VegaStream

⚠️ Unsaved Configuration Changes

Management **DSL**

Logging

Maintenance

LAN

DSL

H.323

Dial Plan

Media Channels

Tones

Users

QoS

Advanced

DSL Configuration

Network Type	NI
Network Topology	T1
Line Encoding	B8ZS
Framing	ESF
Bus Master	1

PORT Configuration

PORT ID	Enabled	NT	Clock Master	Layer 1	E1 rx Short Haul	T1 tx equalization	ISDN	CAS	Groups	Chg?
1	1	0	0	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify
2	1	1	1	g711Alaw64k	1	sh220_330	====>	====>	====>	Modify

Save **Log off** **Help** **Delete** **Add** **Reboot System**

For the configuration indicated in the initial diagram Port 1 and Port 2 are connection to the PSTN, and so the Vega needs both ports configured as TE (and blue booted cables used to make the connection).

Bus Master needs to be configured to point to an active TE trunk – to identify where the Vega will synchronise its internal clock from – in this configuration this can be either Port 1 or Port 2.

Port 2 needs to be converted NT to TE, but otherwise the default settings of the Vega are as required for Clock_Master and Bus_Master settings.

In the **Port Configuration** section, for Port ID 1:

➤ Select [Modify](#)

Port 1

Port Configuration	
Port ID	1
Enabled	<input checked="" type="checkbox"/>
Network Terminator	<input type="checkbox"/>
Clock Master	<input type="checkbox"/>
Layer 1	g711Alaw64k
Set E1 RX short haul	<input checked="" type="checkbox"/>
T1 TX equalization	sh220_330
<input type="button" value="Submit"/>	

ISDN Configuration	
DTMF Termination Char	*
DTMF Dial Timeout	2
Setup Mapping	0
Cause Mapping	0
<input type="button" value="Submit"/>	

CAS Configuration	
ANI	<input type="checkbox"/>
DTMF Separator	*
DTMF Dial Timeout	2
Info	dtmf
Signal	em_wink
Tone Delay	50
<input type="button" value="Submit"/>	

Groups									
Group ID	Interface ID	Cost Index	DN	First Channel	Last Channel	Alloc Channel	Tunnel Mode	Chg?	
1	01	1	*	1	30	default	off	Modify	
Delete	Add								

In the **Port Configuration** section, set Layer 1 = g711Ulaw64k, [Submit](#), click “[here](#)”

In the **Groups in this DSL** section, set the Last Channel = auto, [Submit](#), click “[here](#)”

For a CAS RBS configuration:

In the **CAS Configuration** section, set Signal to the type of CAS RBS signalling required:

- em_wink = E & M wink start signalling
- loopstart = Loop start signalling
- gndstart = Ground start signalling
- fgd = E & M wink start signalling supporting Feature Group D for transferring ANI

➤ select [Submit](#) and then click “[here](#)” to return

If any of the other Port parameters need changing, e.g. Network Terminator, alter them now.

- Note:
1. if NT (Network Terminator) is ticked then typically Clock Master should also be ticked;
if NT is un-ticked (TE mode) then typically Clock Master should also be un-ticked.
 2. if either trunk is TE then the Bus Master value (in the ISDN Configuration section)
should be set to point to the (one of the) TE trunk(s); 1 for Port 1 and 2 for Port 2.

In changes are made

- select **Submit** and then click “[here](#)” to return

- Repeat for the other Port (Port ID 2), including un-ticking the Network Terminator check box.

Table 1 can be used as a guide when setting up parameters for Vega 100 T1 ISDN installations.

Table 1. Network type, Line Encoding, and Topology

Product	Physical Connection	Network Topology	Network Type	DSLs	Framing	Line Encoding	Calls
Vega 100-PRI-T1	T1-1.544 Mbps	T1	AT&T 4ESS / 5ESS, NI 1 / NI 2, DMS-100	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100-PRI-T1	T1-1.544 Mbps	T1	QSIG	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100-PRI-T1	T1-1.544 Mbps	T1	CAS RBS	2	SF / ESF	B8ZS, AMI	24 / 48

9. Configure pointer to CD ROM documentation

- On the left hand side menu select [LAN](#)
- Scroll to the bottom of the screen

The screenshot shows the 'Vega 100 Configuration' interface in Microsoft Internet Explorer. The left sidebar has a tree view with nodes like Management, Logging, Maintenance, LAN (which is expanded), DSL, H.323, Dial Plan, Media Channels, Tones, Users, QoS, and Advanced. The main area shows basic host information (Host Name: Vega100T1E1, IP Address: 192.168.1.106, User Name: admin) and a warning about unsaved changes. Under the LAN node, there are fields for Subnet Mask (255.255.255.0), Domain Name Server (0.0.0.0) with a checked 'Use DHCP' checkbox, Default Gateway (192.168.1.1) with a checked 'Use DHCP' checkbox, TFTP Server (192.168.1.108) with a checked 'Use DHCP' checkbox, Network Time Server (0.0.0.0) with a checked 'Use DHCP' checkbox, FTP Server (192.168.1.108), NTP Offset (hhmm) (0000), and NTP Poll Interval (0). Below these is a 'Physical Layer Configuration' section with Full Duplex (unchecked), Ethernet Type (10baseT & 100baseTX selected), and QoS profile (1). At the bottom, there are Save, Log off, Help, Reboot System, and Apply Changes buttons, and a Submit button. A 'Lan Hosts' table shows one entry: ID 1, Name loopback, IP 127.0.0.1, Chg? Modify. At the very bottom, there's an 'Advanced LAN Configuration' section with a link to 'Advanced LAN' which is circled in green.

- Select [Advanced LAN](#)

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=2032057877&frame_id=30

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

Management **LAN** > Advanced LAN Configuration

Logging **Maintenance**

LAN **DSL** **H.323** **Dial Plan** **Media Channels** **Tones** **Users** **QoS** **Advanced**

LAN Parameters

File Transfer Method TFTP FTP
RTP Checksum

Submit

Path of Help files on server

Path or URL	Help/Vega100/usrguide/framedefn.htm
Note	<p>The default server is TFTP server. e.g.</p> <p>Help/VoIP/usrguide/framedefn.htm or ftp://Help/VoIP/usrguide/framedefn.htm</p> <p>To specify a web server for help files, please use a full URL, e.g.</p> <p>http://1.2.3.4/Help/VoIP/usrguide/framedefn.htm</p>

Save Log off Help Reboot System Apply Changes Submit Done Internet

To configure for operation using the CD in the local PC CD-ROM drive,

- Set Path or URL = D:/Content/help/v100t1h_R5.htm
- ... *N.B. use forward slashes “/” not back slashes “\”.*

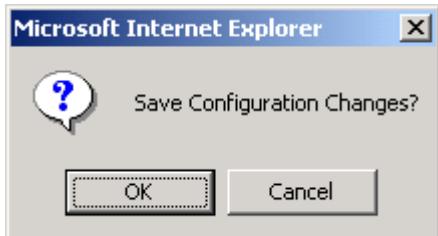
(Substitute the appropriate drive letter if D: is not the CD-ROM)

- select **Submit** and then click “[here](#)” to return

10. Save Changes

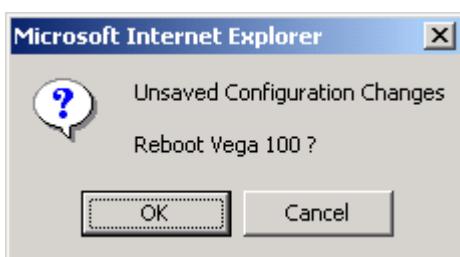
The changes to the configuration must be saved and activated. This is carried out as follows:

- On the left hand side menu select [Save](#)



- Select [OK](#) and after the configuration has been saved click "[here](#)" to return

- On the left hand side menu select [Reboot System](#)



- Select [OK](#)

The Vega will reboot and once back on-line, it will be ready to take its first call.

11. Archive Vega Configuration

Once configured it is recommended that the configuration is archived to an external server.

To do this check that the tftp address is configured to point to a tftp server (in the [LAN](#) page), then on the left hand side menu select [Advanced](#), and scroll to the CLI Command section:

CLI Command

- in the text entry box type “PUT tftp:initial_cfg.txt”. Select

This will send all the configuration parameters to the tftp server and save them as the file “initial_cfg.txt”. (Note: you may want to choose a unique name rather than “initial_cfg.txt”, especially if you are configuring more than 1 unit).

The Vega configuration can be archived to an ftp server instead of a tftp server by configuring the ftp server address in the [LAN](#) page and then typing the CLI command “PUT FTP:initial_cfg.txt”. (Again a unique name can be used in place of “initial_cfg.txt”)

If the ftp server requires a login username and password configure the following:

- set _advanced.lan.ftp.anonymous_login=0
- set _advanced.lan.ftp.username=<ftp username>
- set _advanced.lan.ftp._password-<ftp password>

12. Technical Support

Support information can be found on the VegaStream Support web site www.VegaAssist.com

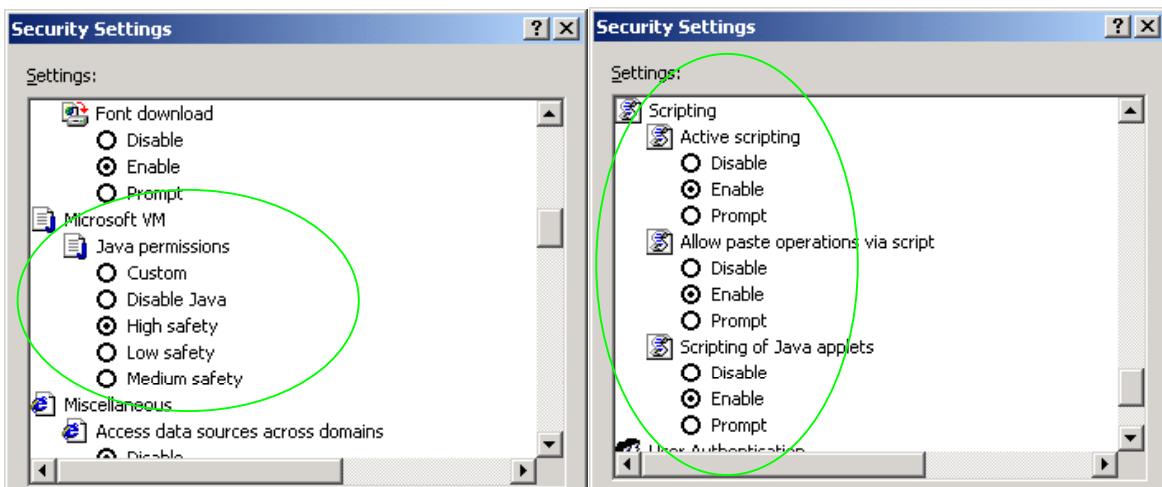
If you require help from VegaStream support personnel, please use the serial interface or telnet into the unit, log in and then type:

- show support
- log display on

Carry out the interaction you want explained, then copy the information provided by the Vega and e-mail it to support@VegaStream.com together with your question.

Notes:

1. If the screens do not appear as indicated, check that Java is enabled on your web browser (Tools>internet options>Security, select internet and custom level and configure Microsoft VM Java permissions and Scripting parameters as indicated below.



2. Where there are multiple sections – each with a **Submit** button – entries must be made to one section at a time, and those entries confirmed by the **Submit** button before the next section is altered. Each **Submit** button only confirms entries for its own section. Any changes in other sections will be discarded when the **Submit** is pressed.
3. H.323 supports two methods for transmitting call setup details. There is a standard method and then Fast Start. To allow the Vega to accept calls using the Fast Start technique ensure “Accept Fast Start” is enabled ... see section 1.5

For the Vega to initiate calls using Fast Start ensure that “Use Fast Start” is enabled ... see section 1.5.

13. Advanced configuration

T1 units have further configurable parameters that may be desirable to configure in order to fully integrate into the attached infrastructure.

13.1 Web browser configurable parameters

13.1.1 Line impedance matching

In order to match the signal shapes produced by the Vega to the T1 line it is working with there is a parameter tx_equalisation that can be configured:

➤ set _advanced.isdn.tx_equalization=<tx_equ>

<tx_equ> can take the following values:

- lhlbo0 (long haul line break out 0 dB)
- lhlbo7_5 (long haul line break out -7.5 dB)
- lhlbo15 (long haul line break out -15 dB)
- lhlbo22_5 (long haul line break out -22.5 dB)
- sh0_110 (short haul 0-110 ft.)
- sh110_220 (short haul 110-220 ft.)
- sh220_330 (short haul 220-330 ft.) - default setting
- sh330_440 (short haul 330-440 ft.)
- sh440_550 (short haul 440-550 ft.)
- sh550_660 (short haul 550-660 ft.)

on the web browser interface, in the port configuration section off the DSL page:

Port Configuration	
Port ID	1
Enabled	<input checked="" type="checkbox"/>
Network Terminator	<input type="checkbox"/>
Clock Master	<input type="checkbox"/>
Layer 1	g711Alaw64k
Set E1 RX short haul	<input checked="" type="checkbox"/>
T1 TX equalization	sh220_330
<input type="button" value="Submit"/>	<ul style="list-style-type: none">lhlbo0lhlbo7_5lhlbo15lhlbo22_5sh0_110sh110_220sh220_330sh330_440sh440_550sh550_660

ISDN Configuration	
DTMF Termination Char	
DTMF Dial Timeout	sh220_330
Setup Mapping	

Long haul values are used where the distance between the Vega and the closest repeater or other ISDN endpoint is greater than 660 feet. Short haul value lengths are the distance between the Vega and the closest repeater or other ISDN endpoint.

If the appropriate test and measurement equipment is not available to check the required setting, for long haul try **Ihlbo0** and for short haul try **sh220_330**.

13.1.2 Channel Allocation Strategies

The Vega allows configuration of the channel allocation strategy to be used for each DSL on outgoing calls. Four options are available,

- i) *Linear_down* – where the Vega will use the highest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using *Linear up*.
- ii) *Linear_up* – where the Vega will use the lowest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using *Linear down*.
- iii) *Round_robin* – in this mode the Vega remembers the last allocated channel and then tries to use the next channel up from this for the next outbound call. (After reaching the highest channel ID it restarts at the lowest channel again.) ... use this mode when the attached device is configured to make outbound calls using *Round_robin* mode.
- iv) *Default* – if the DSL is configured as NT then the Vega will use the *Linear_up* scheme, and if the DSL is configured as TE then the Vega will use *Linear_down*.

By default the Vega has chan_alloc set=*Default*

Using the web browser interface:

- On the left hand side menu select [DSL](#)
- Then select the Port to alter
- Scroll to the bottom of the page

Vega 100 T1E1 Online Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.106/vsframe?sid=261010882&frame_id=7

Vega 100 Configuration

Host Name Vega100T1E1
IP Address 192.168.1.106
User Name admin

CAS Configuration

Dial Format String .
Digit Dial Timeout 6
Info dtmf
Signal em_wink
Tone Delay 50

Groups

Group ID	Interface ID	Cost Index	DN	First Channel	Last Channel	Alloc Channel	Tunnel Mode	Chg?
1	01	1	*	1	auto	default	off	Modify

[Delete](#) [Add](#)

Save Log off Help Reboot System Apply Changes

Internet

In the Groups in this DSL:

➤ Select [Modify](#)

Modify Port Group	
Group ID	1
Port ID	1
Interface ID	01
Cost Index	1
DN	*
First Channel	1
Last Channel	auto
Alloc Channel	<input type="button" value="Default"/> Default Linear Up Linear Down Round Robin
Tunnel Mode	
<input type="button" value="Submit"/>	

➤ Select the desired channel allocation strategy from the Alloc Channel pull down.

➤ select and then click "[here](#)" to return

➤ Save and reboot system to activate the change

13.2 Command Line Interface configurable parameters

These items must be configured using the Command Line interface available either using the serial connection or using a telnet session.

Connect to the Vega and log in.

13.2.1 End to End Call Proceeding

For H.323 to ISDN calls, by default the Vega will send the Call Proceeding message on the H.323 interface as soon as all the dialling information has been received.

It is possible to configure the Vega only to send the Call Proceeding on the H.323 interface once it has received the call proceeding from the outgoing call made on the ISDN interface – i.e. the call proceeding is passed from end to end rather than being generated by the Vega. This mode is useful when the Vega is not the end point in the telephony network, but is an intermediate carrier.

To set the Vega to support end to end call proceeding, at the CLI prompt type:

➤ Set `_advanced.isdn.end_to_end_call_proceeding=1`

To allow the Vega to generate the call proceeding message set this configuration parameter to 0.

➤ Save and reboot system to activate the change

13.2.2 User progress tones – towards ISDN interface

For ISDN to H.323 calls, by default if the Vega DSL is configured as TE it will connect media through before or at alerting so that progress tones are passed through from end to end (i.e. for the ISDN caller to hear ringback and other progress tones the audio must be received over the H.323 interface).

If it is required that the Vega generates these progress tones on the TE ISDN interface, then at the CLI prompt type:

- Set `_advanced.isdn.user_progress=1`
- Save and reboot system to activate the change

Notes: 1. If the Vega DSL is configured as NT it will always generate the call progress tones.
E.g. ringback and disconnect tones.
2. Typically `wait_for_connect` and `user_progress` configuration parameters should either both set to 1 or both set to 0.

13.2.3 User progress tones – towards H.323 interface

For H.323 to ISDN calls, by default the Vega will act upon the in-band audio indicator in the alerting message and if present will connect the media path.

If it is required that the Vega should ignore the in-band audio indicator, and so not pass on the inband tone, then at the CLI prompt type:

- Set `_advanced.isdn.alert_with_progress=0`
- Save and reboot system to activate the change

If it is required that the Vega should always cut through the audio whatever the value of the in-band audio indicator, then at the CLI prompt type:

- Set `_advanced.isdn.alert_with_progress=2`
- Save and reboot system to activate the change

Further details on this and other parameters may be found in the Vega Primer.