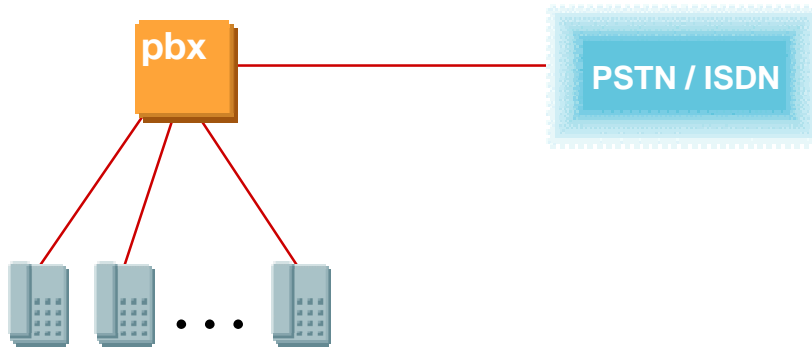


# Initial configuration Vega 100 between PSTN and PBX – R6

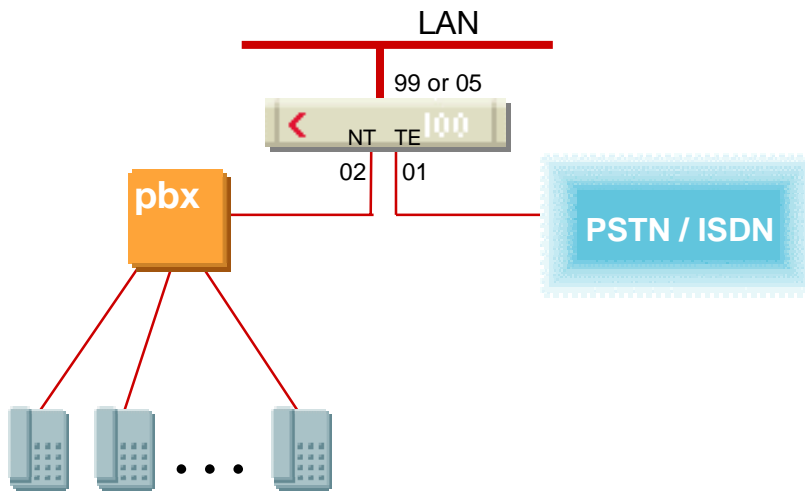


When connecting a Vega in line between a PBX and the PSTN / ISDN that were previously connected, it is important that the Vega is configured to operate transparently. This document describes how to configure a Vega 100 ISDN gateway to operate transparently.



POTS Telephones

***Initial connection, PBX direct to PSTN / ISDN***



POTS Telephones

***Vega connected between PBX and PSTN / ISDN***

*To stop the Vega overriding the ISDN “Type of Number”, “Numbering Plan” “CLI Presentation” and “CLI Screening” signalling fields as calls transit it, make the following changes:*

On the Vega web browser select the [Advanced](#) screen.

In the **Setup Mapping – Calling Party Number** section  
Modify map ID 1 details such that:

- Type = supplied
- Plan = supplied
- Presentation = supplied
- Screening = supplied

In the **Setup Mapping – Called Party Number** section  
Modify map ID 1 details such that:

- Type = supplied
- Plan = supplied

Now select the [DSL](#) screen.

For each DSL, in the **Port Configuration** section select [Modify](#)  
In the **ISDN Configuration** section for that port set:

- Setup Mapping = 1

*In order to give callers on the PBX a reasonable time to dial their telephone numbers, set the dtmf dial timeout to 5 seconds (instead of the default value of 2)*

On the Vega web browser select the [DSL](#) screen.

For each DSL, in the **Port Configuration** section select [Modify](#)  
In the **ISDN Configuration** section for that port set:

- DTMF Dial Timeout = 5

*If the E1 or T1 link is only a “partial” or “fractional” link, i.e. supports less than its full complement of channels, you need to configure the maximum channel ID that the Vega will use.*

On the Vega web browser select the [DSL](#) screen.

For each DSL, in the **Port Configuration** section select [Modify](#)  
In the **Groups** section for that port, for Group ID 1 select [Modify](#)

In the **Modify Port Group** section, set:

- Last Channel = <maximum channel ID>

e.g. for a partial E1 or T1 supporting 15 channels, <maximum channel ID> = 15

To minimise the occurrences of inbound and outbound calls attempting to use the same channel ensure that the Vega is configured appropriately<sup>1</sup>.

On the Vega web browser select the [DSL](#) screen.

For each DSL, in the **Port Configuration** section select [Modify](#)  
In the **Groups** section for that port, for Group ID 1 select Modify  
In the **Modify Port Group** section, set:

- Alloc Channel = <channel allocation scheme>

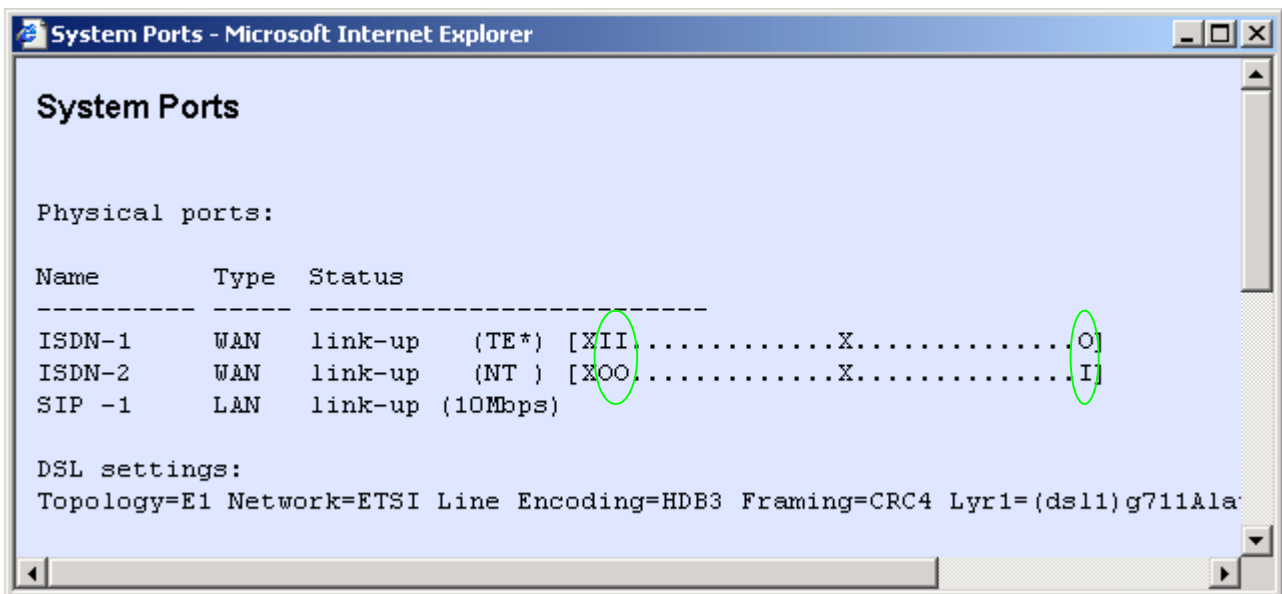
Choose <channel allocation scheme> as follows:

If the PSTN or PBX to which the DSL port is attached:

1. makes its first call on channel 1 then the next on the next lowest free channel (channel 2 or channel 1 if channel 1 has become free), <channel allocation scheme> = Linear down
2. makes its first call on the highest channel available on the dsl then the next on the highest free channel (highest channel -1 or highest channel if the highest channel has become free), <channel allocation scheme> = Linear up
3. makes its first call on channel 1 then the next on channel 2, the next on channel 3 etc. <channel allocation scheme> = Round Robin

If you do not know how the PSTN and PBX have been configured, use [Show Ports](#) from the **System** section of the [Management](#) screen to show the usage.

I indicates an inbound call on that DSL, O an outbound call. For Linear Up / Linear down configuration the I s and the O s should be at opposite ends of the trunks (as shown below). For Round Robin, both I s and O s should rotate through the available channels.



Now create Dial Plans so that the Vega will route all traffic from the PBX to the PSTN, and all traffic from the PSTN to the PBX.

(These instructions assume that the Vega dial plans are in their factory reset state – if changes have already been made, either undo those changes, or interpret the following instructions based on the changes that have been made.)

<sup>1</sup> Common practice on partial / fractional links is to set outbound calls as linear up, and not to apply an upper bound (last\_channel=auto). This would allow the telco to increase the number of channels supported on the E1 / T1 without needing to alter the configuration of the Vega.

On the Vega web browser select the [Dial Plan](#) screen.

In the **Profiles** section, for Profile ID 1, select [Modify](#)

In the **Modify Profile** section, set:

- Enabled = un-ticked

Immediately under the **Profiles** section

Press the **Add** button

In the **Profiles** section, for Profile ID 2, select [Modify](#)

Set:

- Name = Trunking\_pass\_thru

In the **Profiles** section, for Profile ID 2, select [Modify](#)

In the **Plans in this Profile** section, for Plan ID 1, select [Modify](#)

Set:

- Name = PSTN\_to\_PBX
- Source = IF:01,TEL:<.\*>
- Destination = IF:02,TEL:<1>

After pressing **Apply**, immediately under the **Plans in this Profile** section

Press the **Add** button

In the **Plans in this Profile** section, for Plan ID 2, select [Modify](#)

Set:

- Name = PBX\_to\_PSTN
- Source = IF:02,TEL:<.\*>
- Destination = IF:01,TEL:<1>

Optional:

*Additional dial plans can be configured to speed up specific ranges of dialled numbers (it avoids the Vega having to wait for the DTMF dial timeout – configured above – because we are going to program fixed length dial strings).*

*e.g. to speed up UK national call out-dialling (11 digit numbers, starting 01, 02 or 07):*

- Source = IF:02,TEL:<0[127].....>
- Destination = IF:01,TEL:<1>

*Note: if the PBX applies a carrier preselect prefix, e.g. cccc then the dial plan has to be modified to:*

- Source = IF:02,TEL:<cccc0[127].....>
- Destination = IF:01,TEL:<1>

where cccc is the carrier preselect digits.

*If multiple carrier pre-select values are used write multiple dial plans, one for each set of carrier preselect digits.*

*Also consider other prefixes like 141 – which turns off the delivery of caller ID.*

Lastly, set up the call progress tone definitions correctly

- Ringing
- Dial tone
- Busy tone
- Etc.

– see the [Tones](#) page on web browser and IN\_16-Progress\_tones

The Vega is now configured to operate transparently. Now further dial plans can be written to “groom” off specific calls across the LAN, as required. Further configuration may also be required depending on the other devices that are in the LAN network for the Vega to communicate with.

**See the appropriate step by step configuration guide and the Vega Primer for additional information.**

#### Advanced

Ensure that:

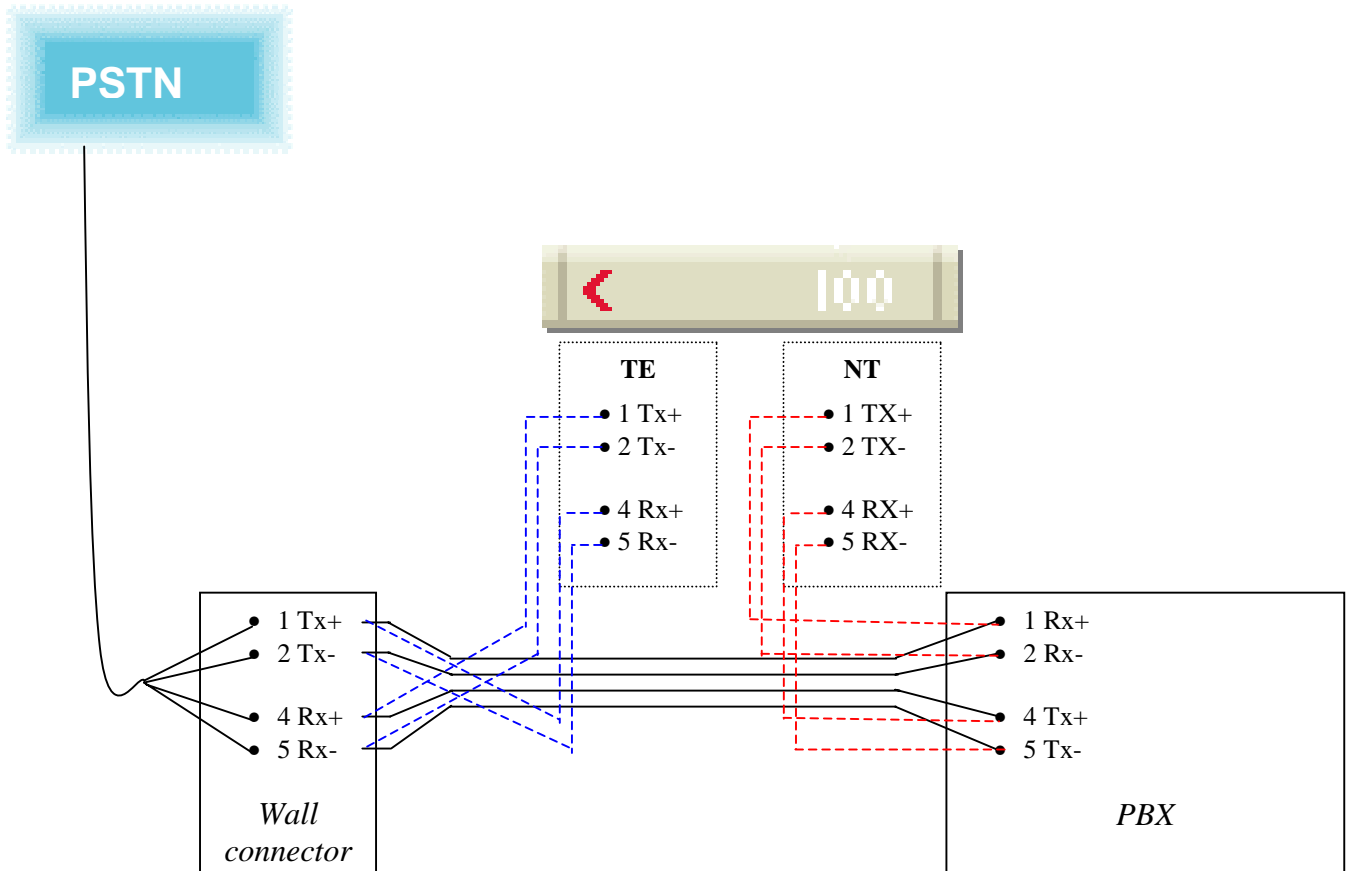
<code>_advanced.media.direct_TDM_enable=1</code>	[default value]	(don't pass trunk to trunk media through DSPs)
<code>_advanced.isdn.alert_with_progress=1</code>	[default value]	(if PSTN / ISDN provides ringback tone, pass it through; if it doesn't then generate ringback tone locally)
<code>_advanced.isdn.user_progress=0</code>	[default value]	(TE side does not need to generate ringback or disconnect tones locally)

If Vega ringback is heard when voice announcements are expected, e.g. when a message like “the number you have dialled has been changed to ...”

Set `_advanced.isdn.alert_with_progress=2`

Annex 1

Physical connectivity



Cable pinouts

Cables with RJ48 plugs are used to connect to the Vega 100's ISDN ports. The pinout of the Vega 100 E1/T1 card is hardwired as NT. A (RED) straight through cable is used to connect an NT Vega DSL to a TE far end device. A (BLUE) cross-over cable is used to connect a TE Vega DSL to an NT far end device.

Vega 100 PRI	Far end device		Far end device	
NT (physical)	NT	TE	NT	TE
1 (Tx+)	4 (Rx+)	1 (Rx+)	3 (Rx+)	4 (Rx+)
2 (Tx-)	5 (Rx-)	2 (Rx-)	6 (Rx-)	5 (Rx-)
4 (Rx+)	1 (Tx+)	4 (Tx+)	4 (Tx+)	3 (Tx+)
5 (Rx-)	2 (Tx-)	5 (Tx-)	5 (Tx-)	6 (Tx-)
	VegaStream provided cables (ISO 10173)		ISO 8877	

For Loopback between a Vega NT port and a Vega TE port, use the BLUE cable

Contact Details  
Email: [support@vegastream.com](mailto:support@vegastream.com)  
Web: [www.vegastream.com](http://www.vegastream.com)  
[www.vegaassist.com](http://www.vegaassist.com)

EMEA Office  
VegaStream Limited  
Berkshire Court  
Western Road  
Bracknell  
Berks RG12 1RE  
UK

+44 (0) 1344 784900

USA Office  
VegaStream Inc.  
10445 Pacific Center Court  
San Diego  
CA 92121  
USA

+1 858 824 6388