

## **Melbourne-Jakarta-Singapore Frame Relay Network configuration**

### **Introduction**

This document describes the configuration of the initial phase of the Melbourne-Jakarta-Singapore Frame Relay Network implementation. In this phase, the links to Jakarta are X.25 connected to the existing Bull SPS 7/75 AMSC, directly replacing the V.29 links to Melbourne and Singapore.

### **Protocol**

In this phase, the protocols will be:

Melbourne-Singapore:	TCP/IP
Melbourne-Jakarta:	X.25 over IP
Singapore-Jakarta:	X.25 over IP

### **Frame Relay Network**

The Frame Relay network is provided by BT Australasia, with PVCs between the three centres as follows:

Melbourne-Singapore:	8Kbps
Melbourne-Jakarta:	8Kbps ( <b>note:</b> this replaces 2 x 4Kbps shown in earlier plans)
Singapore-Jakarta:	4Kbps

### **TCP/IP addressing**

IP addresses for the link are in accordance with the WMO plan for RA V as given in Attachment II-15 to the manual on the GTS. The application of these addresses is shown in Figure 1.

IP addresses for internal networks are the responsibility of each Meteorological Service. Internal addresses must be either officially allocated by the country's national Internet authority or a private address scheme implemented by the Meteorological Service. If private addresses are used, hosts communicating on the GTS must have their addresses translated to official addresses by Network Address Translation (NAT) in the GTS access router. In this phase, there is no need for internal IP addresses in the Jakarta Centre.

### **Router configuration**

Cisco routers in each centre must be appropriately configured to enable the network to operate. A suggested configuration for the Jakarta router is given in Attachment 1.

### **Implementation sequence.**

As GTS traffic is now routed via Singapore and the Melbourne-Jakarta link is suspended, it is proposed to implement the Melbourne-Jakarta component of this scheme first. When that is complete and working, the Singapore-Jakarta link should then be implemented. Following this, the existing Singapore-Jakarta V.29 circuit can be cancelled.

### **Later phases**

A new MSS system is to be installed in Jakarta in late 1999 or early 2000, as part of transfer of NMC Jakarta operations to the new centre at Kemayoran. At that stage, the Melbourne-Jakarta and Singapore-Jakarta links will be converted to TCP/IP running the WMO MSS socket procedures.

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X.25 to Jakarta

**Attachment 1****Suggested configuration of Jakarta Cisco router**

```

!
jakata-gw
!
service tcp-keepalives-in
service tcp-keepalives-out!
X25 routing
!
Ethernet0
no ip address
shutdown
!
interface Serial0
description BT Frame relay connection
no ip address
encapsulation frame-relay
bandwidth 64
frame-relay lmi-type ansi
!
interface Serial0.1 point-to-point
description Frame relay link to Melbourne
ip address 193.105.183.6 255.255.255.252
bandwidth 64
frame-relay interface-dlci XX ! XX = the DLCI supplied by BT
!
interface Serial0.2 point-to-point
description Frame relay link to Singapore
ip address 193.105.183.33 255.255.255.252
bandwidth 64
frame-relay interface-dlci XX ! XX = the DLCI supplied by BT
!
interface Serial1
description MSS connection for Melbourne PVCs
no ip address
bandwidth 2
clock rate 4800
encapsulation x25
x25 win 2
x25 wout 2
x25 ips 128
x25 ops 128
x25 lic 3
x25 pvc 1 tunnel 193.105.183.5 interface serial 2 pvc 1
x25 pvc 2 tunnel 193.105.183.5 interface serial 2 pvc 2
!
interface Serial2
description MSS connection for Singapore PVCs
no ip address
bandwidth 2
clock rate 4800
encapsulation x25
x25 win 2
x25 wout 2
x25 ips 128
x25 ops 128
x25 lic 3
x25 pvc 1 tunnel 193.105.183.34 interface serial 1 pvc 1

```

```
x25 pvc 2 tunnel 193.105.183.34 interface serial 1 pvc 2
!  
!  
! the configuration below assumes that port 1 on the async module is line 1  
line 1  
session-timeout 2 output  
location Difacs  
no exec  
transport input all  
stopbits 1  
rxspeed 4800  
txspeed 4800  
flowcontrol hardware  
!  
!
```