

**Corporate Network Solutions  
Business Networks Systems Division**

**Technical  
Information  
Bulletin**

**TITLE:**

**Assignment of Location Data for CODEC selection.**

**SYSTEM APPLICATION:**

NEAX 2000 IPS

**SOFTWARE VERSION APPLICATION:**

SC3076 E1 3.06

**ATTACHMENTS:**

**Doc-Reg ID:**

<http://www.kbase.cns.nec.com.au/>

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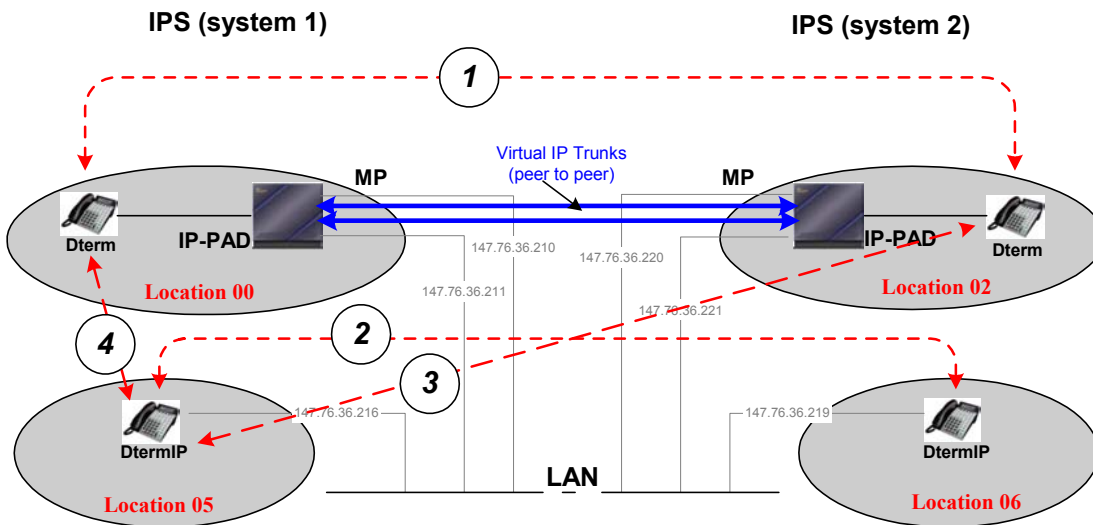
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# INTRODUCTION

The aim of the document is to provide additional information on the use of location numbers to select codecs for different call scenarios that can exist on a VoIP network.

Different codecs may be used for different call setups, (call scenarios 1, 2, 3, 4) on the same network. This is achieved using location numbers.

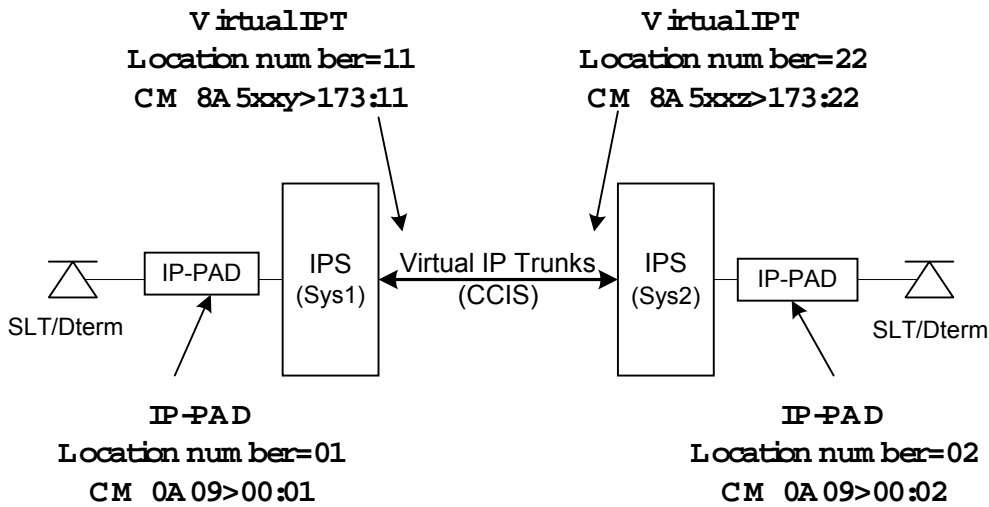
For the purpose of this document, call scenario 1 and 3 is using G729a. Call scenario 2 and 4 is using G711.



# CALL SCENARIO 1

## Inter System call via Virtual IP Trunks using the IP-PAD.

In the example below the codec to be used is G729a.



## Programming

### System 1

*IP-PAD programming.*

CM0A09>00:01

*Virtual-IPT programming.*

CM8A5XXY>173:11

*Codec negotiation programming*

CM67 Y=00 + 0111 = 0 (list 0, G729a)

CM67 Y=00 + 1101 = 0 (list 0, G729a)

*Codec Programming.*

List 0.

CM42 + 100-107 + Codec

CM42 > 100 : 04 (04 = G729a)

CM42 > 101 : ZZ

CM42 > 102 : ZZ

CM42 > 103 : SS

CM42 + 110-117 + Payload

CM42 > 110 : 04 (04 = 4x10ms)

CM42 > 111 : xx

CM42 > 112 : zz

CM42 > 113 : ss

### System 2

*IP-PAD programming.*

CM0A09>00:02

*Virtual-IPT programming.*

CM8A5XXY>173:22

*Codec negotiation programming*

CM67 Y=00 + 0222 = 0 (list 0, G729a)

CM67 Y=00 + 2202 = 0 (list 0, G729a)

*Codec Programming.*

List 0.

CM42 + 100-107 + Codec

CM42 > 100 : 04 (04 = G729a)

CM42 > 101 : ZZ

CM42 > 102 : ZZ

CM42 > 103 : SS

CM42 + 110-117 + Payload

CM42 > 110 : 04 (04 = 4x10ms)

CM42 > 111 : xx

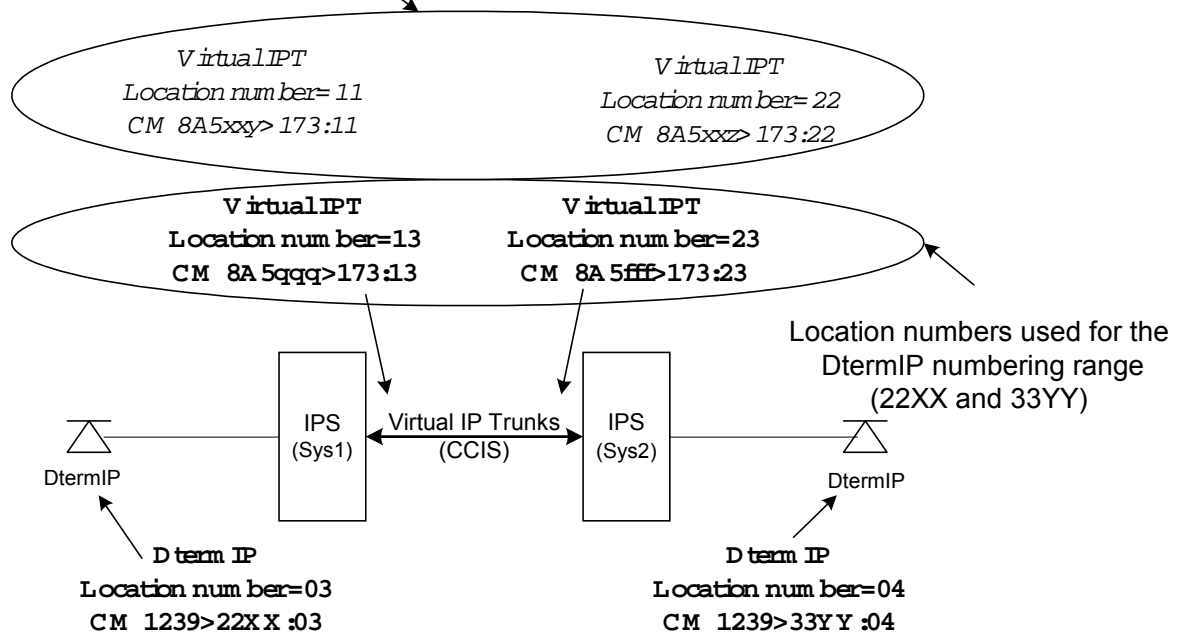
CM42 > 112 : zz

CM42 > 113 : ss

## CALL SCENARIO 2

### Inter System call via Virtual IP Trunks using DtermIPs.

Location numbers used for the SLT/Dterm numbering range



### Programming

#### System 1

*DtermIP programming.*  
CM1239>22XX:03

*Virtual-IPT programming.*  
CM8A5qqq>173:13

*Codec negotiation programming*  
CM67 Y=00 + 1303 = 1 (list 1, G711)  
CM67 Y=00 + 0313 = 1 (list 1, G711)

#### *Codec Programming.*

List 1.  
CM42 + 120-127 + Codec  
CM42 > 120 : 02 (02 = G711)  
CM42 > 121 : ZZ  
CM42 > 122 : ZZ  
CM42 > 123 : SS

CM42 + 130-137 + Payload  
CM42 > 130 : 04 (04 = 4x10ms)  
CM42 > 131 : xx  
CM42 > 132 : zz  
CM42 > 133 : ss

#### System 2

*DtermIP programming.*  
CM1239>33YY:04

*Virtual-IPT programming.*  
CM8A5fff>173:23

*Codec negotiation programming*  
CM67 Y=00 + 2304 = 1 (list 1, G711)  
CM67 Y=00 + 0423 = 1 (list 1, G711)

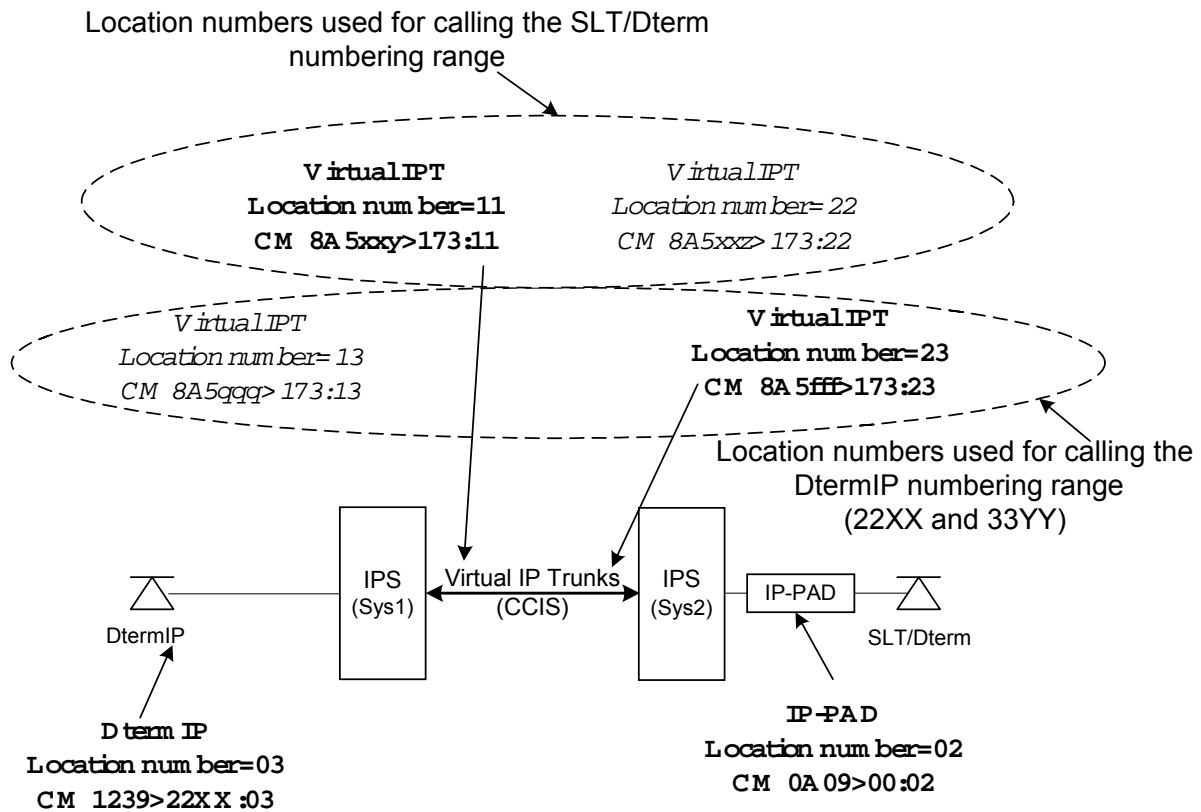
#### *Codec Programming.*

List 1.  
CM42 + 120-127 + Codec  
CM42 > 120 : 02 (02 = G711)  
CM42 > 121 : ZZ  
CM42 > 122 : ZZ  
CM42 > 123 : SS

CM42 + 130-137 + Payload  
CM42 > 130 : 04 (04 = 4x10ms)  
CM42 > 131 : xx  
CM42 > 132 : zz  
CM42 > 133 : ss

## CALL SCENARIO 3

### Inter System call via Virtual IP Trunks, DtermIP to SLT/Dterm (IP-PAD).



### Programming

#### System 1

*DtermIP programming.*

CM1239>22XX:03

*Virtual-IPT programming.*

CM8A5xxy>173:11

*Codec negotiation programming*

CM67 Y=00 + 1103 = 0 (list 0, G729a)

CM67 Y=00 + 0311 = 0 (list 0, G729a)

*Codec Programming.*

List 0.

CM42 + 100-107 + Codec

CM42 > 100 : 04 (04 = G729a)

CM42 > 101 : ZZ

CM42 > 102 : ZZ

CM42 > 103 : SS

CM42 + 110-117 + Payload

CM42 > 110 : 04 (04 = 4x10ms)

CM42 > 111 : xx

CM42 > 112 : zz

CM42 > 113 : ss

#### System 2

*IP-PAD programming.*

CM0A09>00:02

*Virtual-IPT programming.*

CM8A5fff>173:23

*Codec negotiation programming*

CM67 Y=00 + 0223 = 0 (list 0, G729a)

CM67 Y=00 + 2302 = 0 (list 0, G729a)

*Codec Programming.*

List 0.

CM42 + 100-107 + Codec

CM42 > 100 : 04 (04 = G729a)

CM42 > 101 : ZZ

CM42 > 102 : ZZ

CM42 > 103 : SS

CM42 + 110-117 + Payload

CM42 > 110 : 04 (04 = 4x10ms)

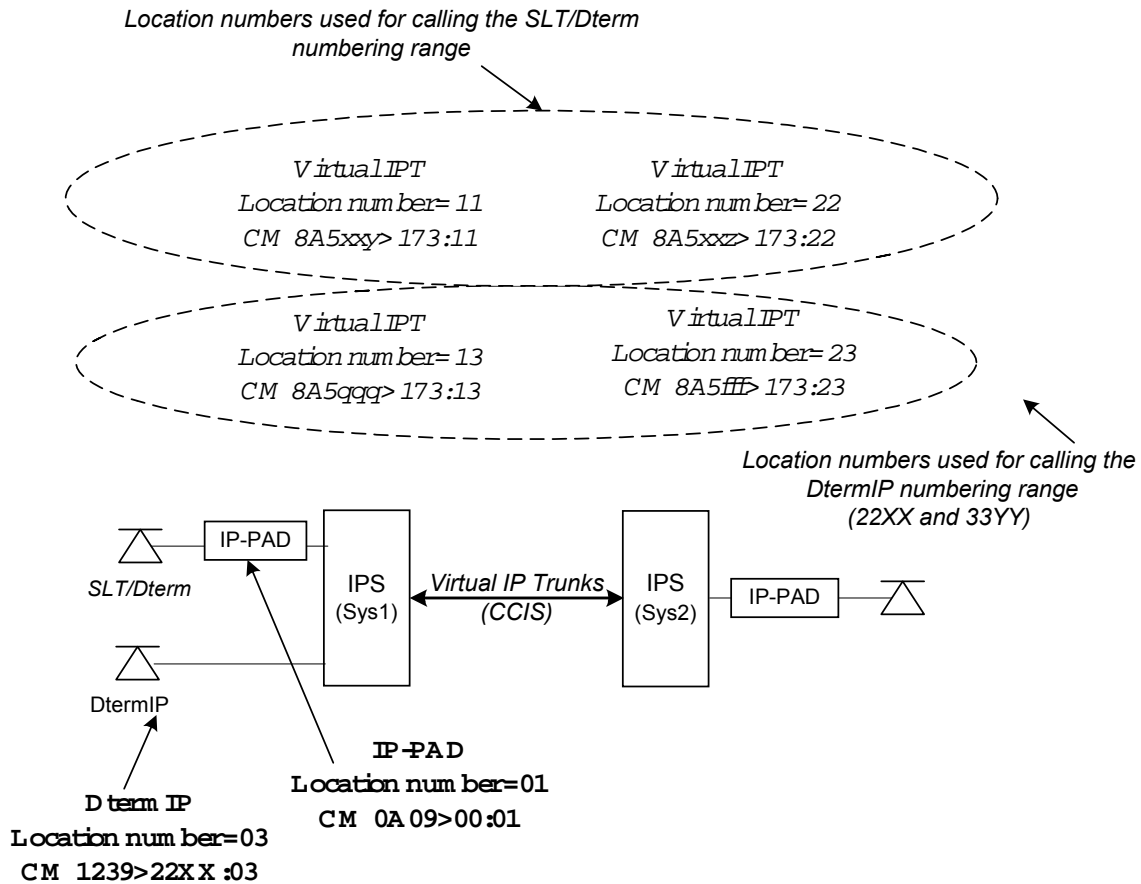
CM42 > 111 : xx

CM42 > 112 : zz

CM42 > 113 : ss

## CALL SCENARIO 4

### Intra System call SLT/Dterm (IP-PAD) and DtermIP



## Programming

### System 1

*DtermIP programming.*

CM1239>22XX:03

*IP-PAD programming.*

CM0A09>00:01

*Codec negotiation programming*

CM67 Y=00 + 0103 = 1 (list 1, G711)

CM67 Y=00 + 0301 = 1 (list 1, G711)

*Codec Programming.*

List 1.

CM42 + 120-127 + Codec

CM42 > 120 : 02 (02 = G711)

CM42 > 121 : ZZ

CM42 > 122 : ZZ

CM42 > 123 : SS

CM42 + 130-117 + Payload

CM42 > 130 : 04 (04 = 4x10ms)

CM42 > 131: xx

CM42 > 132 : zz

CM42 > 133 : ss

## SUMMARY

The key to understanding the codec selection, is that CM67 is used for codec NEGOTIATION.

The originating system will request a codec level based on its CM 67 preference.

The terminating system will check to see what codec list it would apply if it was making the call (through its own 8A5xxx, 67 and 42 tables). If it's codec list in CM42 matches the originating request, then the call is set up to that codec.

Eg In Call Scenario 1,

system 1 requests a G729 codec

system 2 checks its data in 8A5xxx, 67 and 42 and determines G729 is OK.

The call is established at G729.

If the system 2 data is changed to be 67>0222:1, and 67>2202:1 (use list 1, and set 42>120:02 first choice codec = G711 only)

system 1 requests a G729 codec

system 2 checks its data in 8A5xxx, 67 and 42 and determines G729 is not available and to use G711.

The call is established at G711. (note here that G711 was not part of the system 1 codec list in CM42, but as a higher standard codec is accepted by default)

If G729 is added to codec list 1 (42>121:04)

system 1 requests a G729 codec

system 2 checks its data in 8A5xxx, 67 and 42 and determines G729 is OK as second choice.

The call is established at G729.

If system 2 originates the call now with the modified codec table, it will request a G711 codec as first choice.

System 1 will check its data and find G729 is the preferred codec

System 2 finds G729 as a second choice and accepts the codec change

The call is established at G729.

Trunk Access is considered the same as any other legacy terminal. The location selection will be made on the IP PAD location and LCR location as set for the extensions. Some flexibility is available in the originating system by using LCR tenanting and assigning different location codecs based on the calling tenant. (eg Fax extn tenant requests G711, other extns request G729).