



Automatic CFM domain configuration using CC

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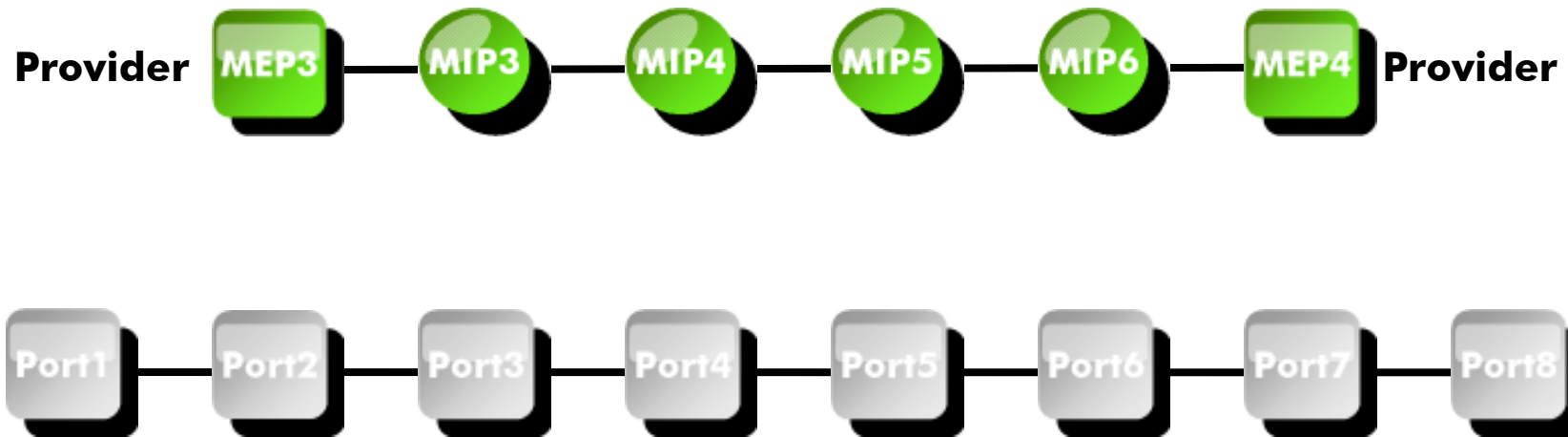
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Maarten Vissers
Tony Van Kerckhove

Introduction: CC automatic CFM domain configuration

- > We propose a CC based CFM domain configuration
- > Goal: Auto-configure MIP's with their correct level
- > Simple solution reusing CC for applications where GARP is not implemented.
- > In addition: solution prevents leaking out of CFM domain

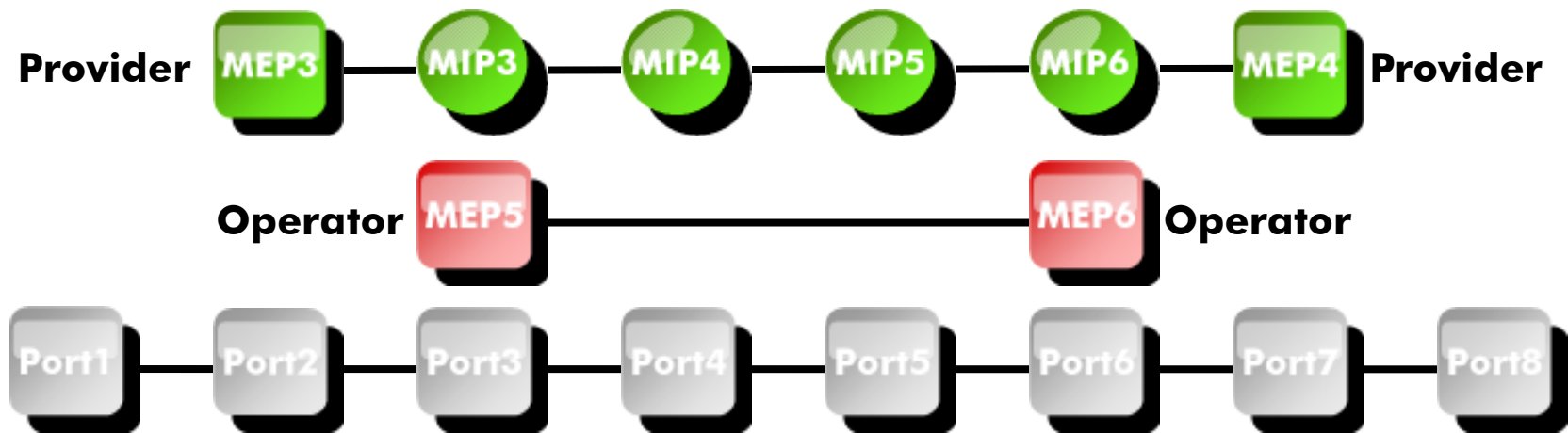
Level determination of MIP's using CC

- > Today: MIP's do not react to CC
- > Proposal: MIP looks at the CC and picks $\text{minimum}\{\text{level}\#1, \dots, \text{level}\#k\}$



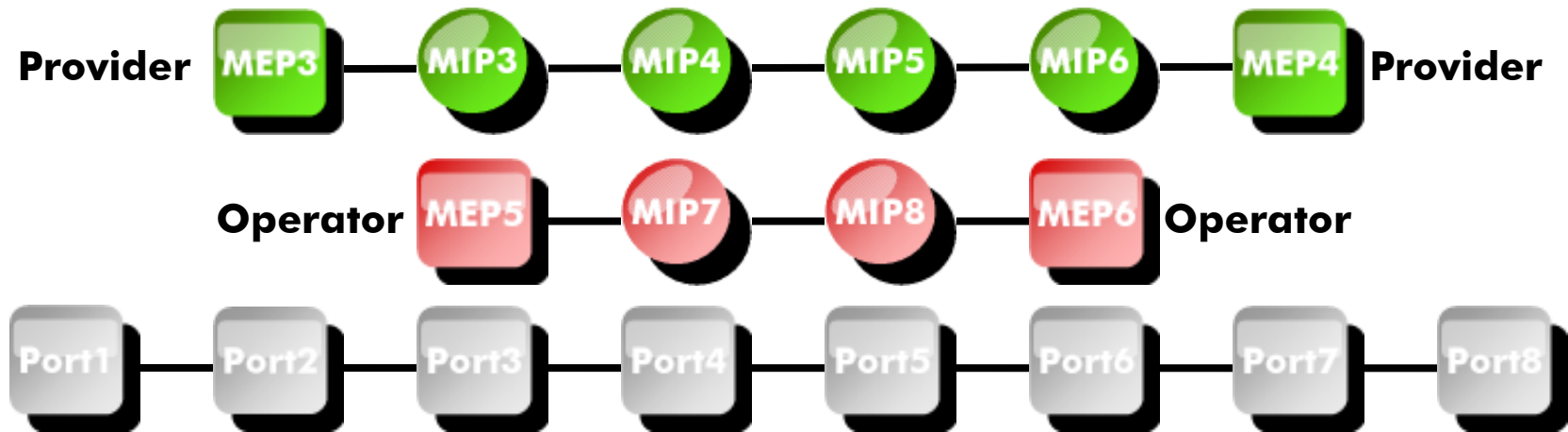
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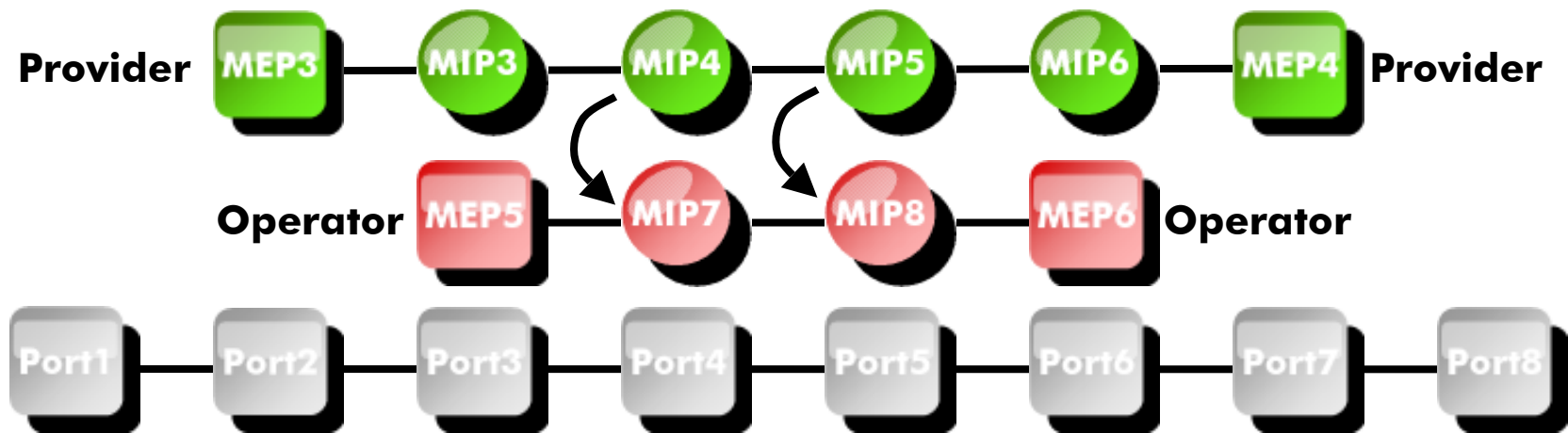
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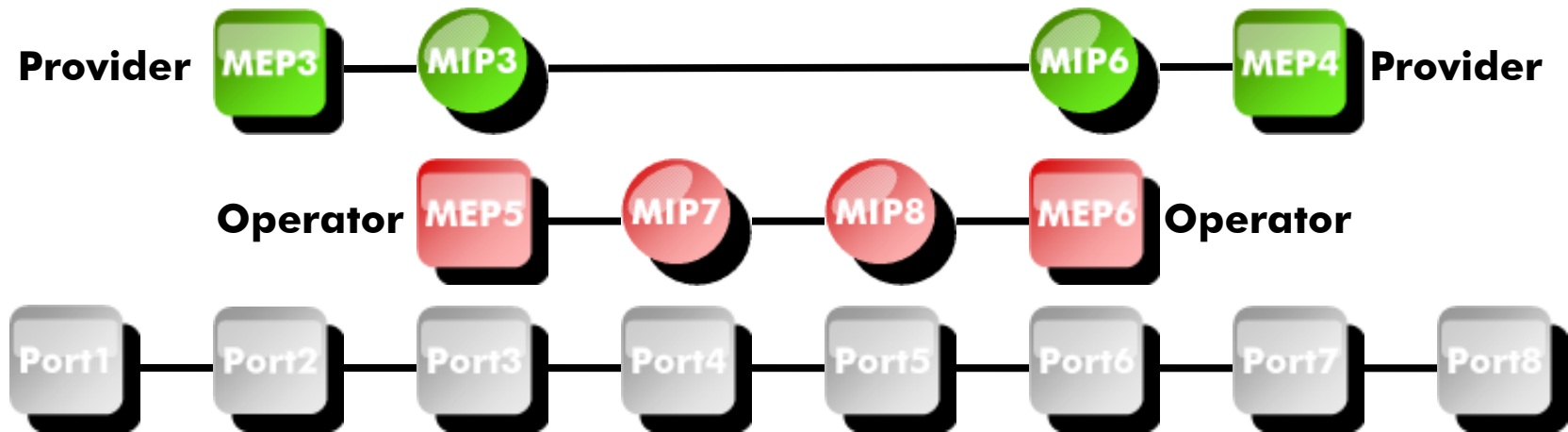
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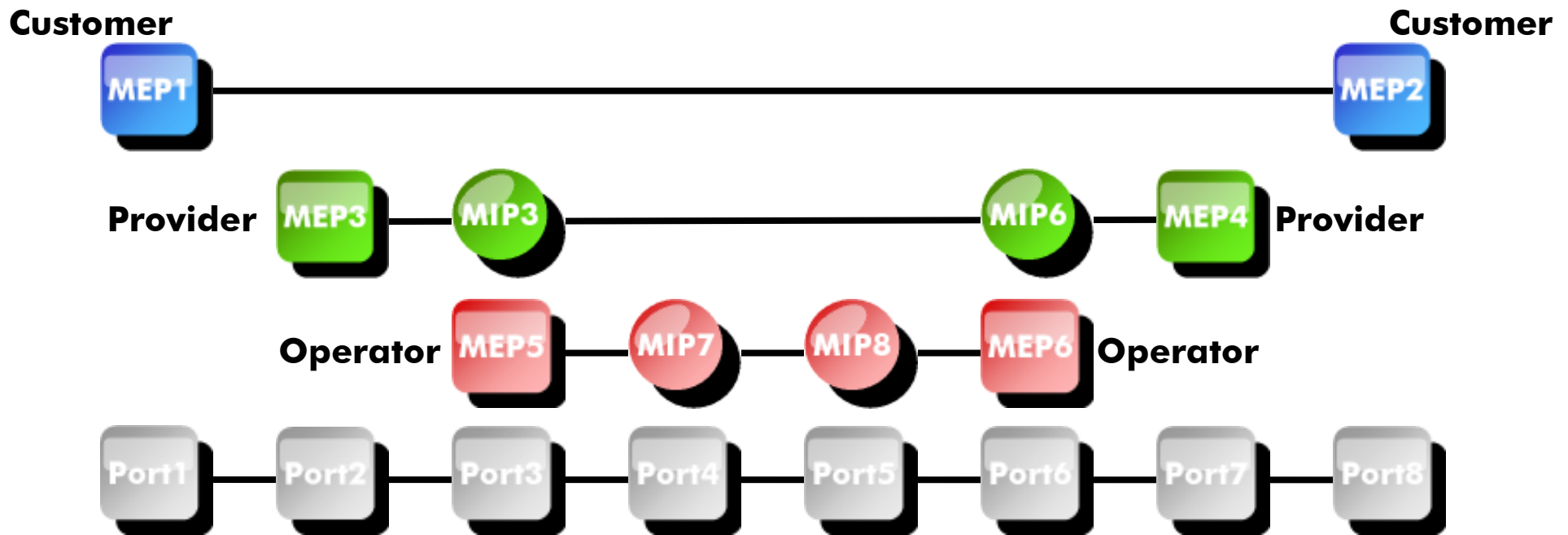
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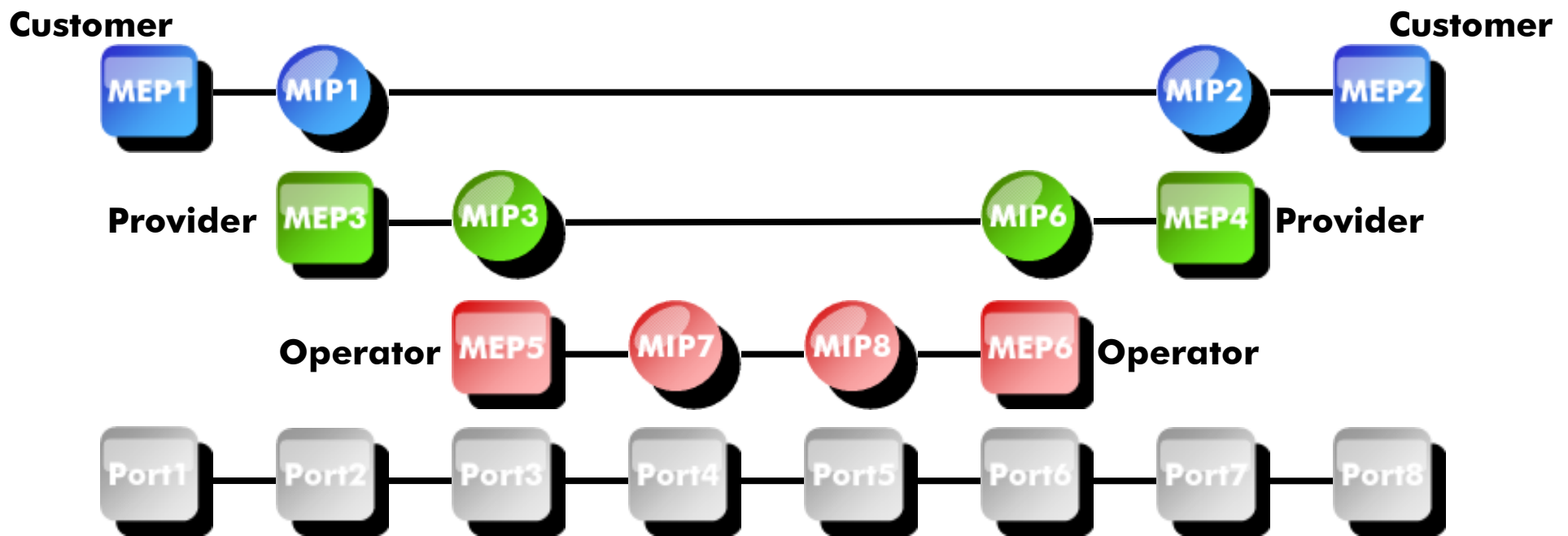
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Flow points



Maintenance End Point



Maintenance Intermediate Point



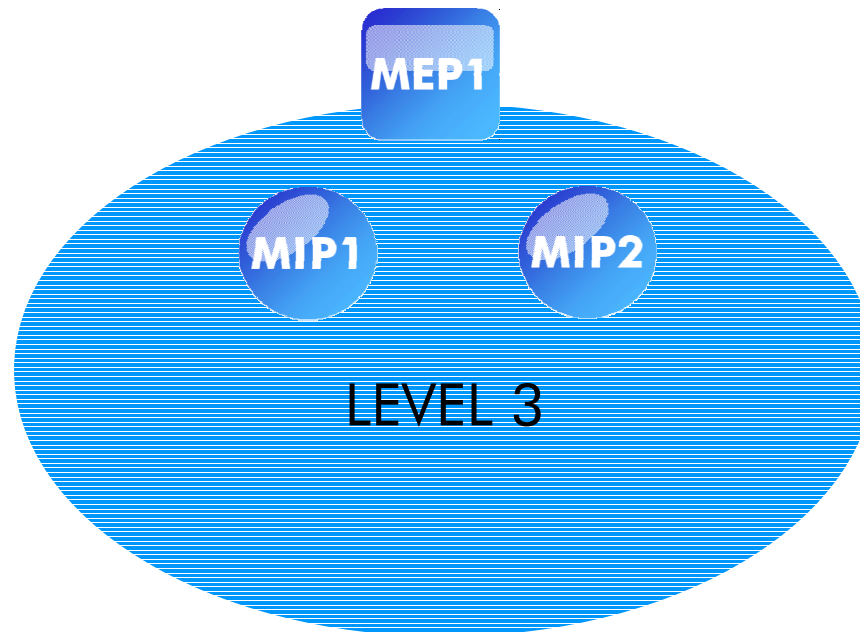
Maintenance Stop Point – NEW
Is a MIP/MEP+filtering



Inactive Flow point
No MIP , MEP, MSP activated

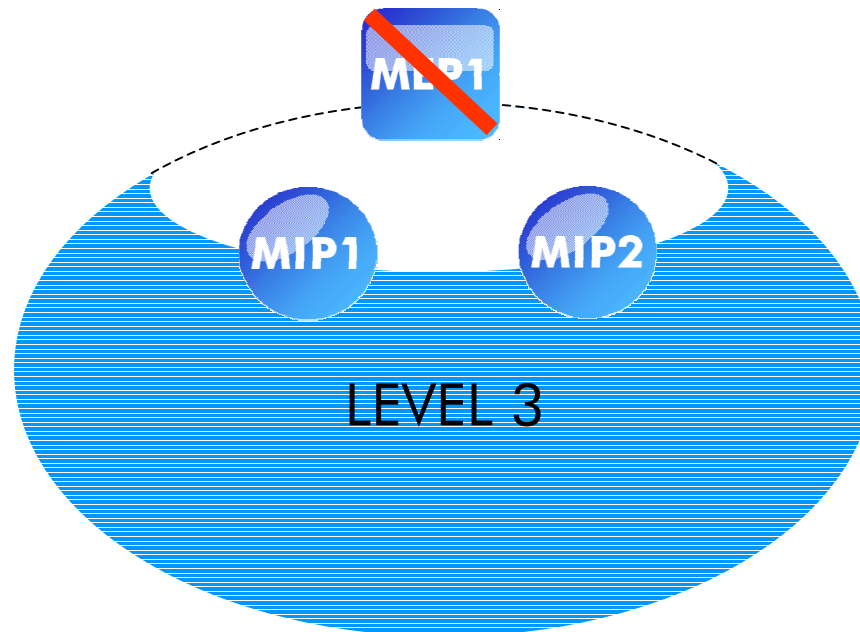
Maintenance Stop Points (MSP)

- > MSP's filter CFM frames
- > Automatically configured



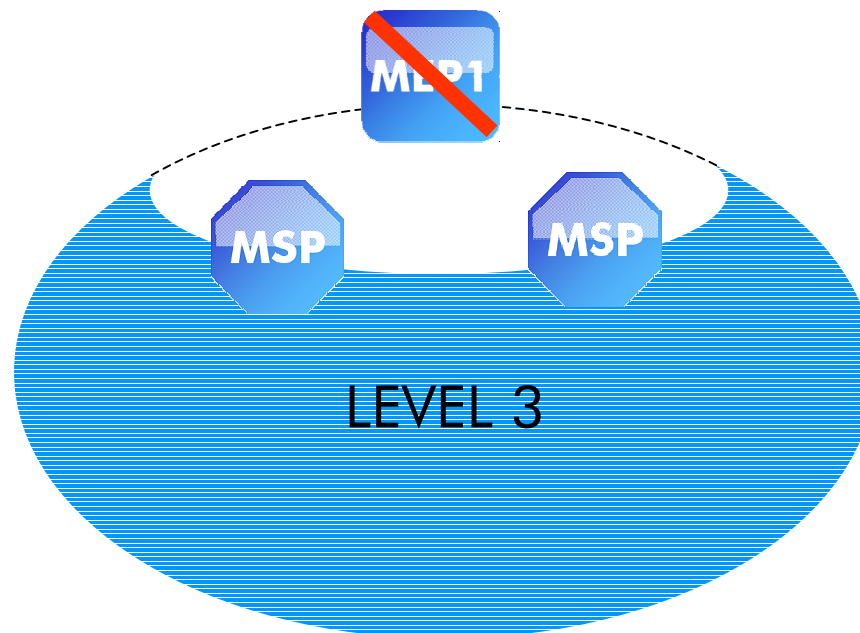
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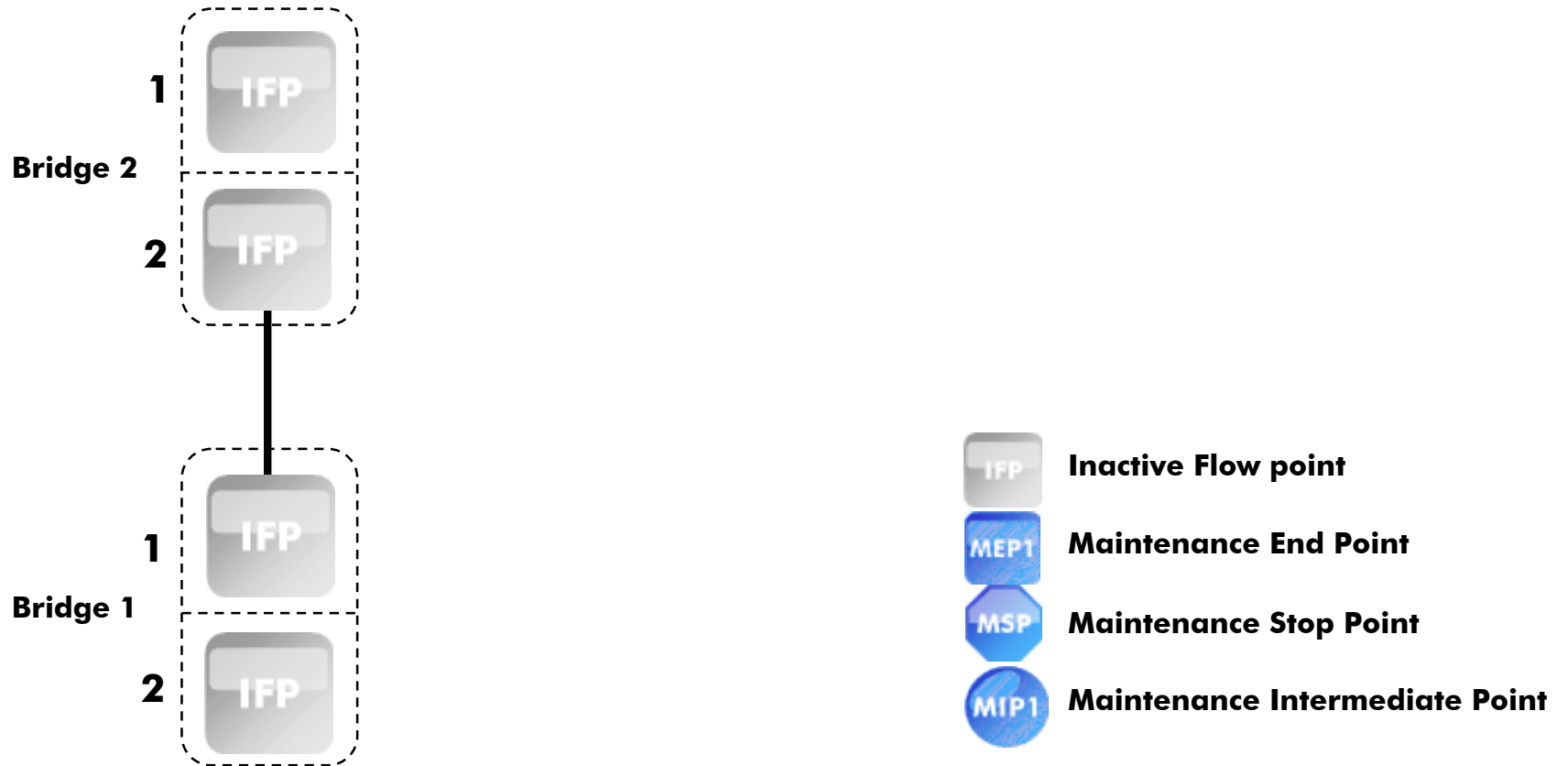


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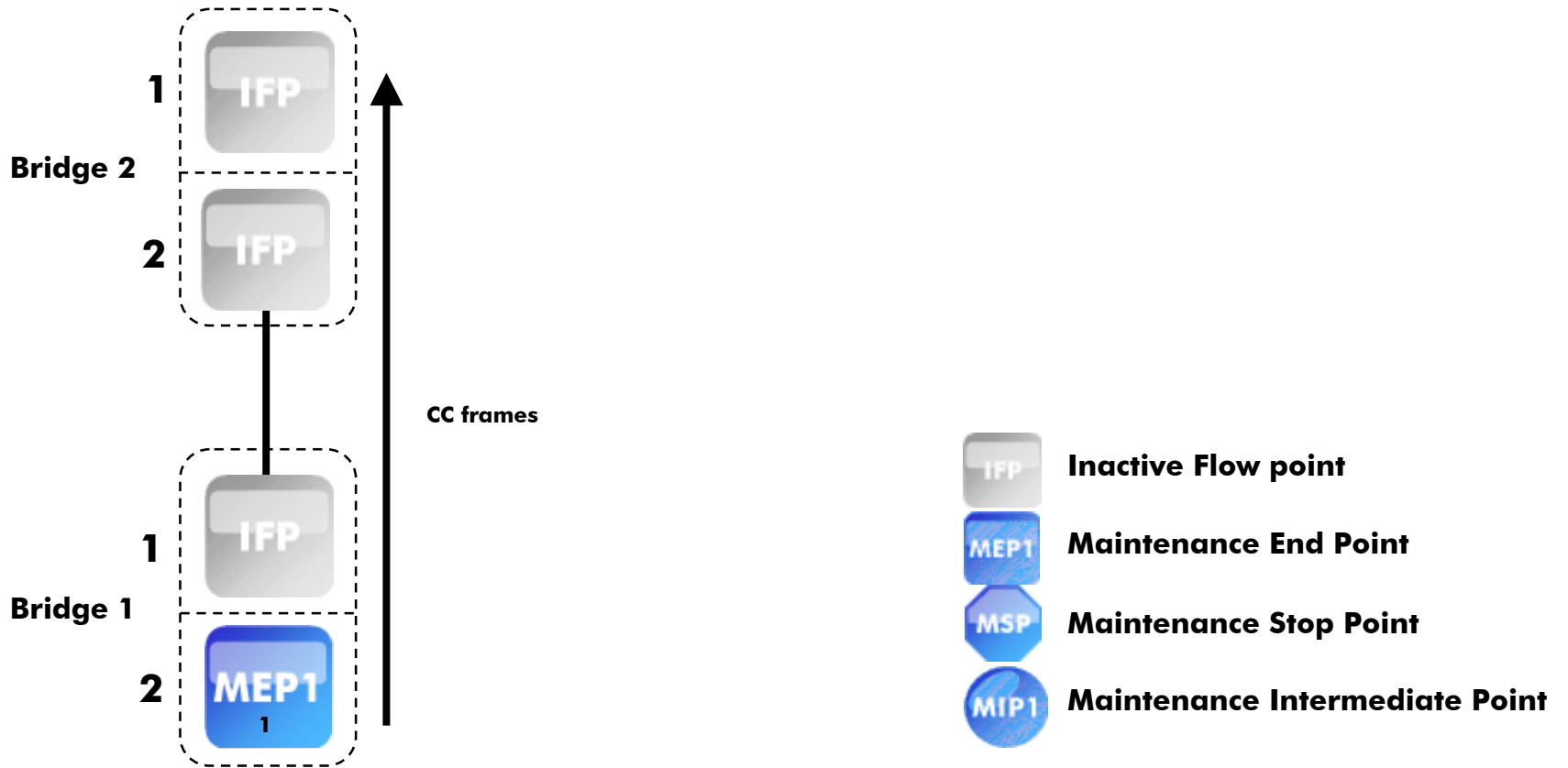
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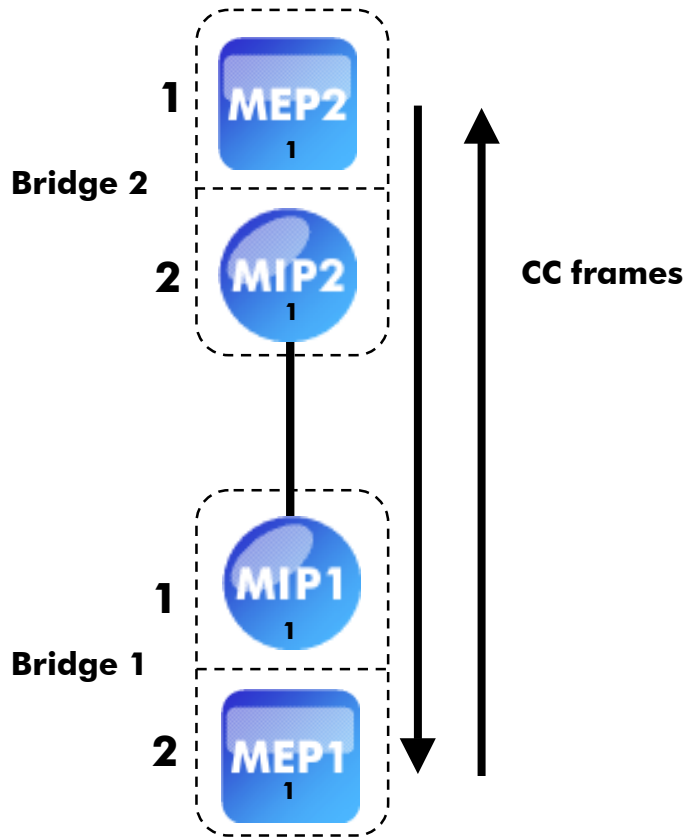
Automatic configuration of MIPs and MSPs



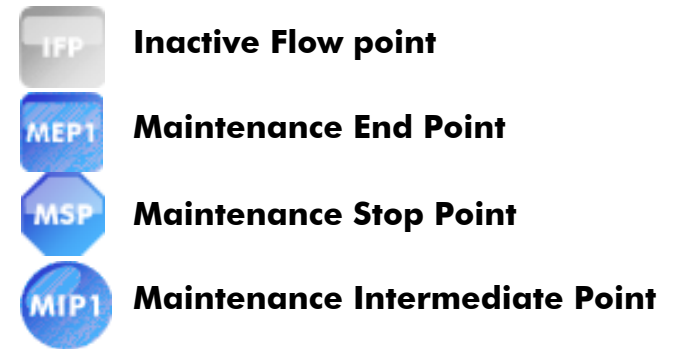
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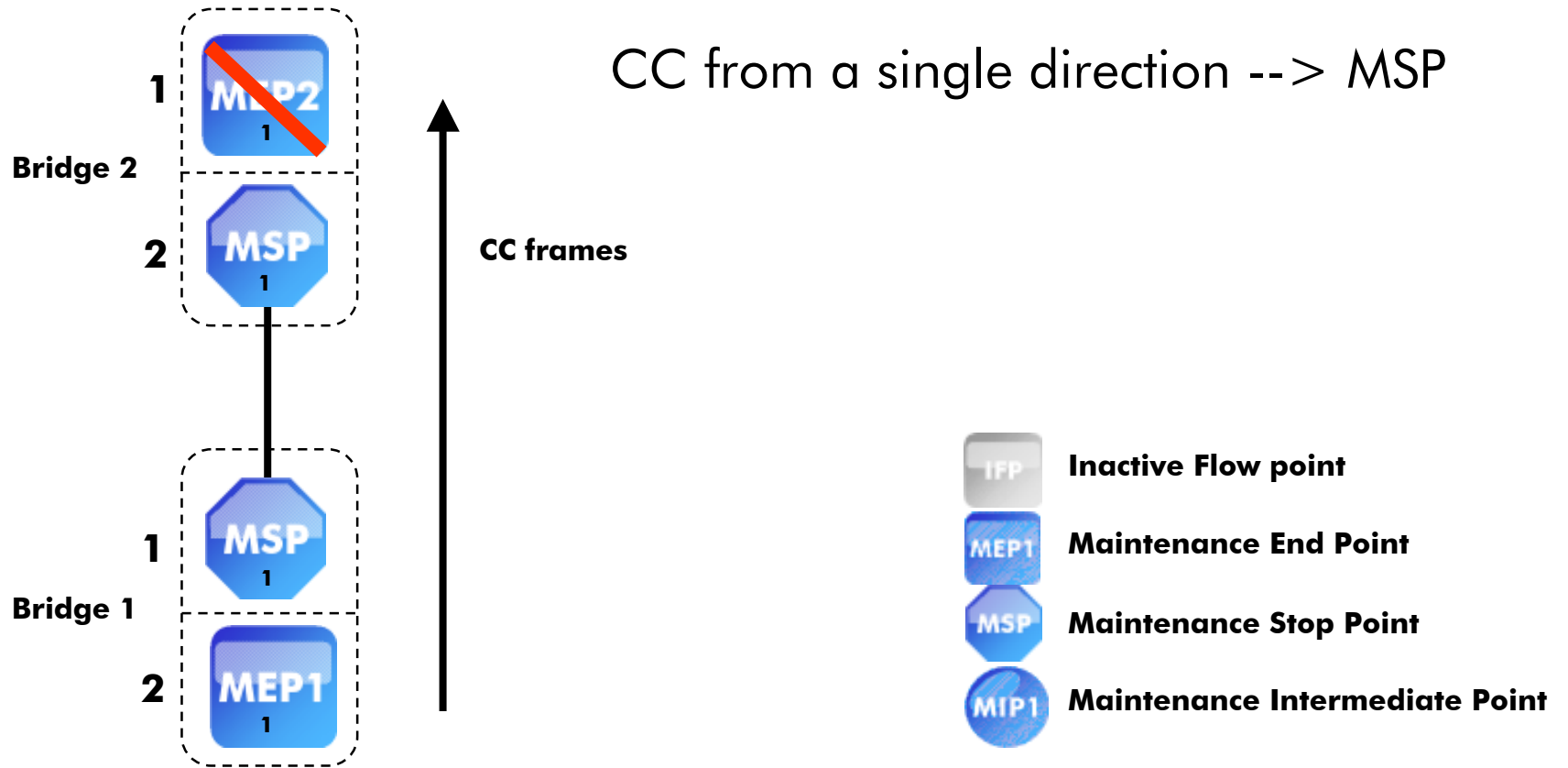
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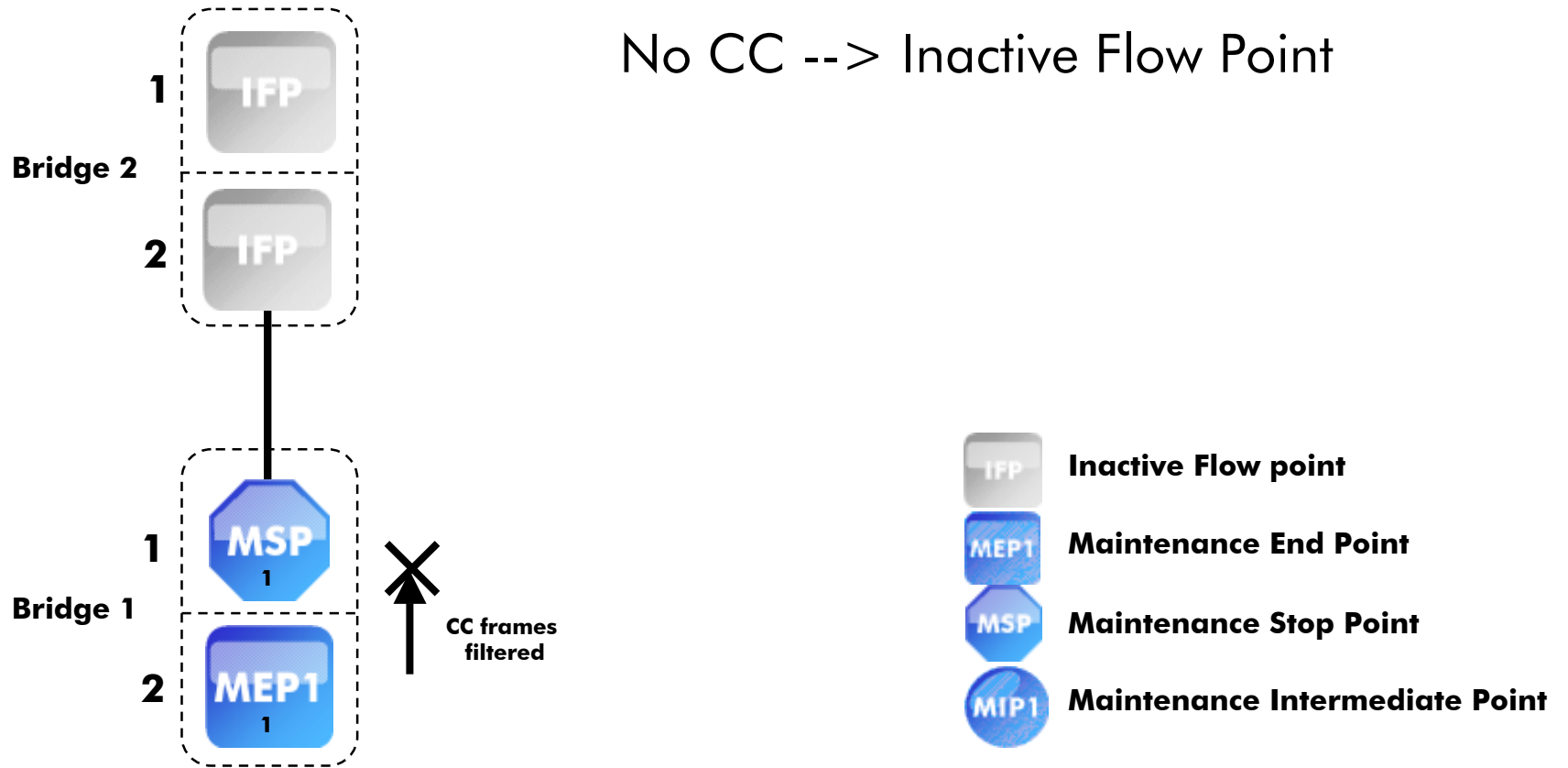
CC from both direction ---> MIP



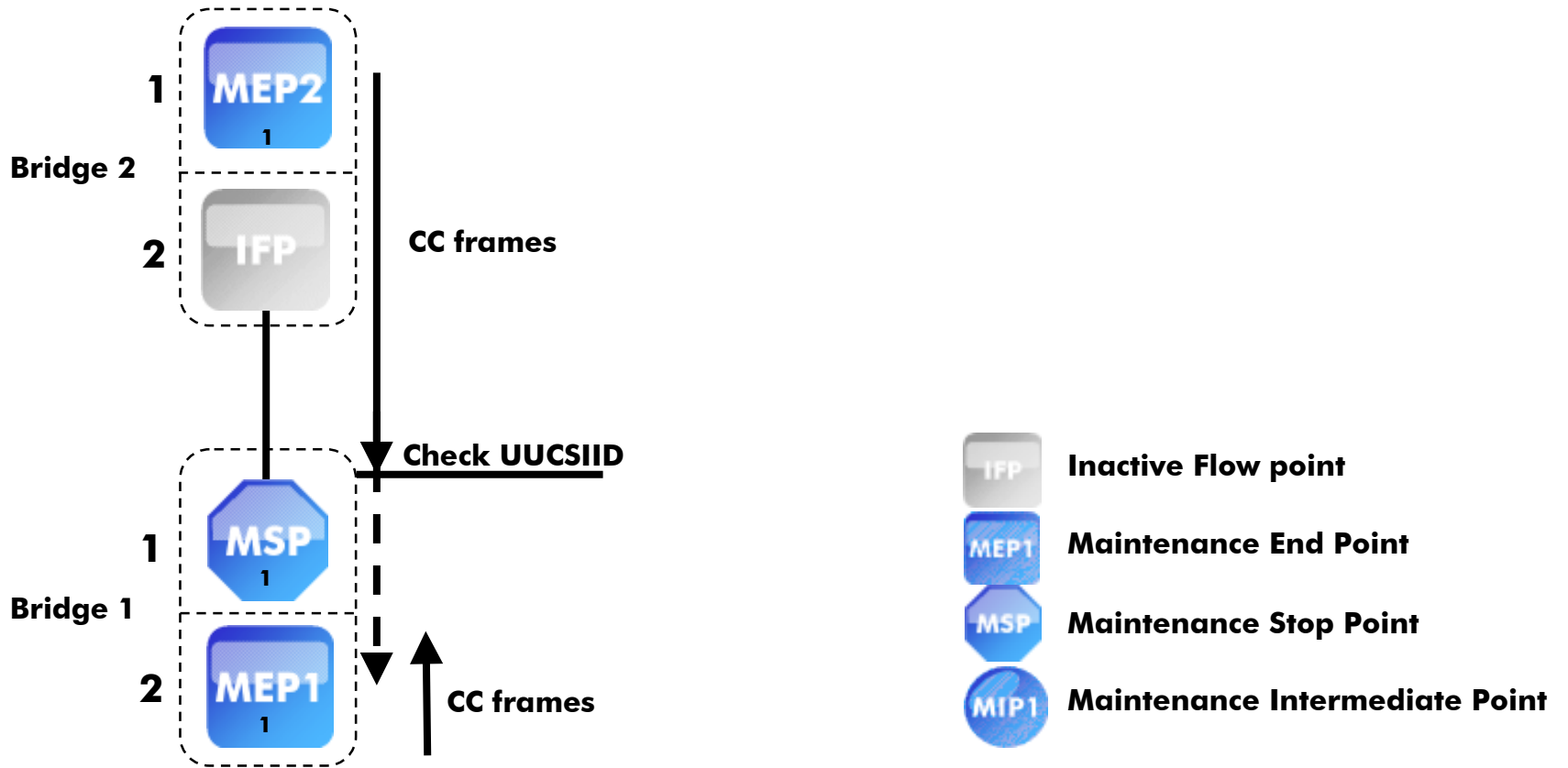
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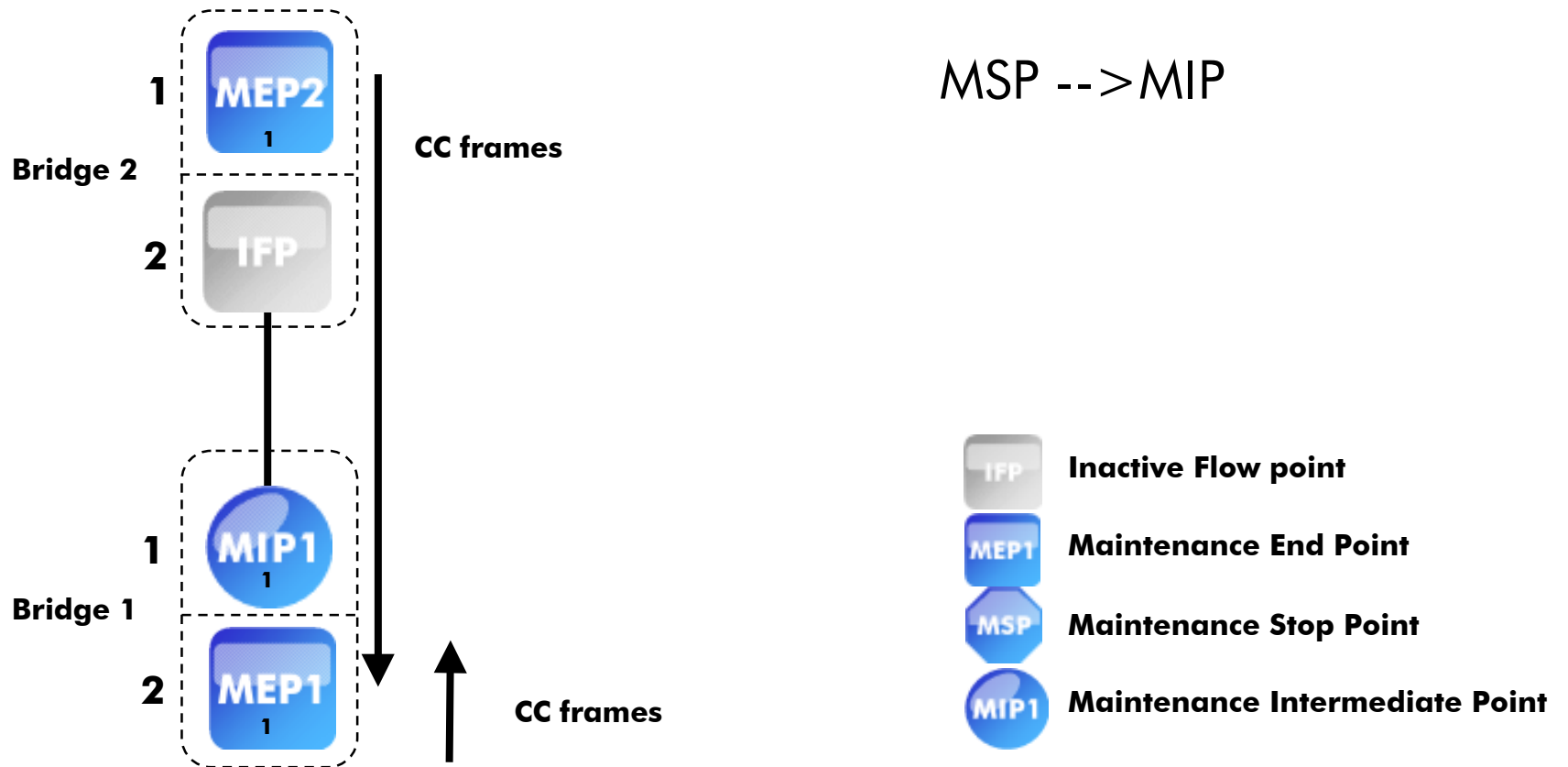
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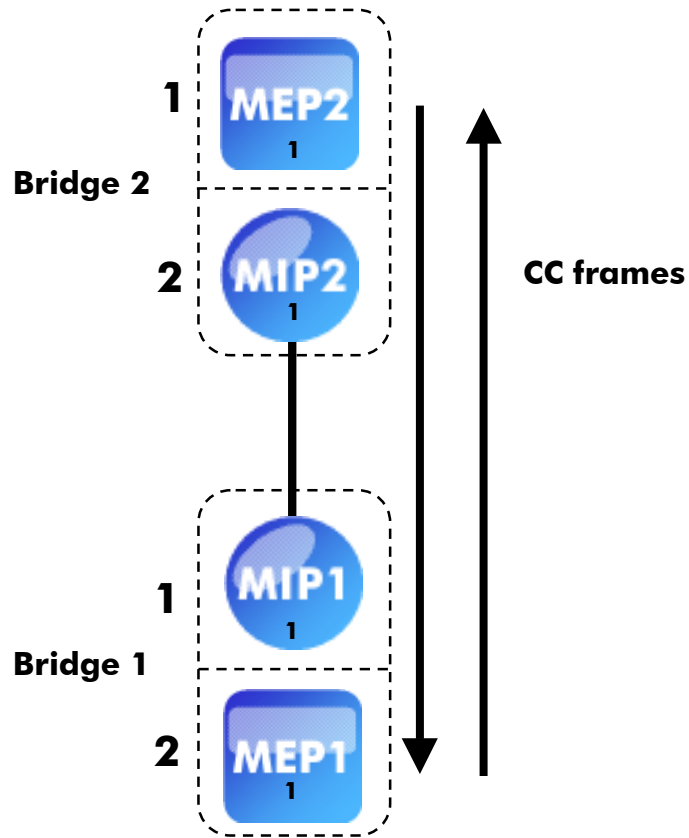
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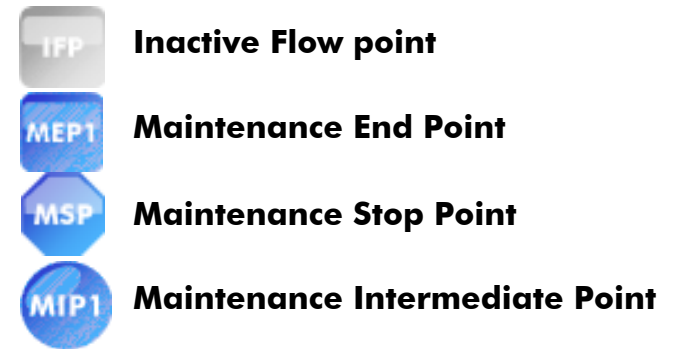
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Automatic configuration of MIPs and MSPs



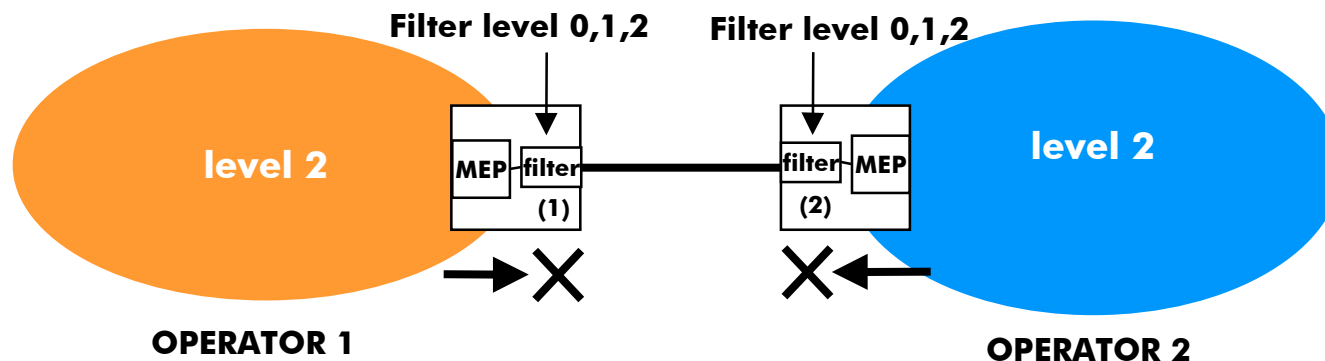
CC from both direction ---> MIP



Automatic configuration of MIPs and MSPs

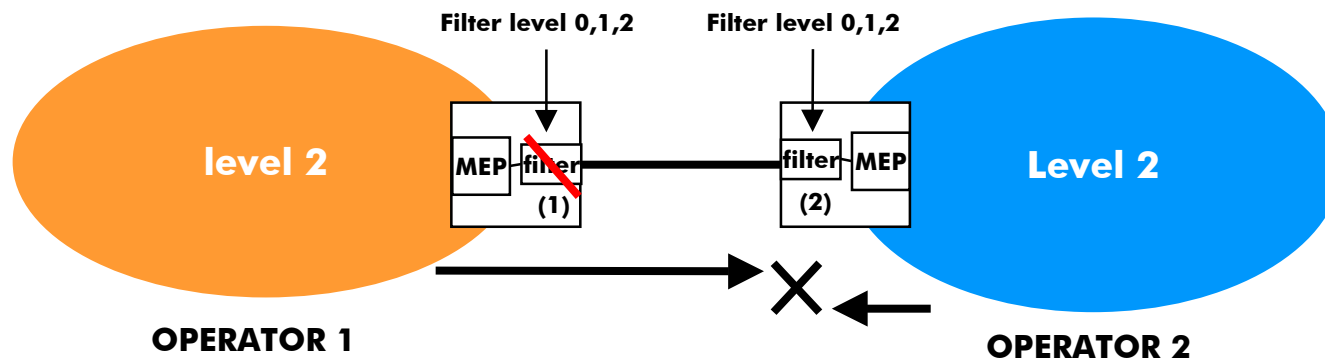
Current State	Next State
CC from a single direction  	MSP 
No CC  	Inactive flow point state 
CC from both direction   	MIP 
Maintenance Stop Point (MSP) receiving CC from outside the domain with correct CSIID 	MIP 

Problem: Inter-operator leaks



- > Normally: A MEP will not let CC frames get in or get out
- > If the MEP filtering function is defective, CFM frames might leak from a domain to the other

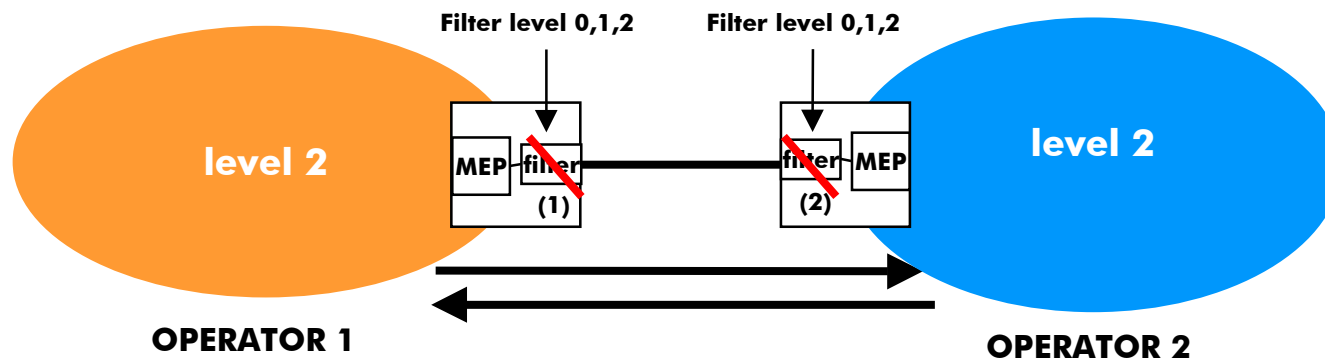
Problem: Inter-operator leaks



> If filter (1) faulty:

- no need to take immediate corrective action
- CFM frame filtered by filter (2)

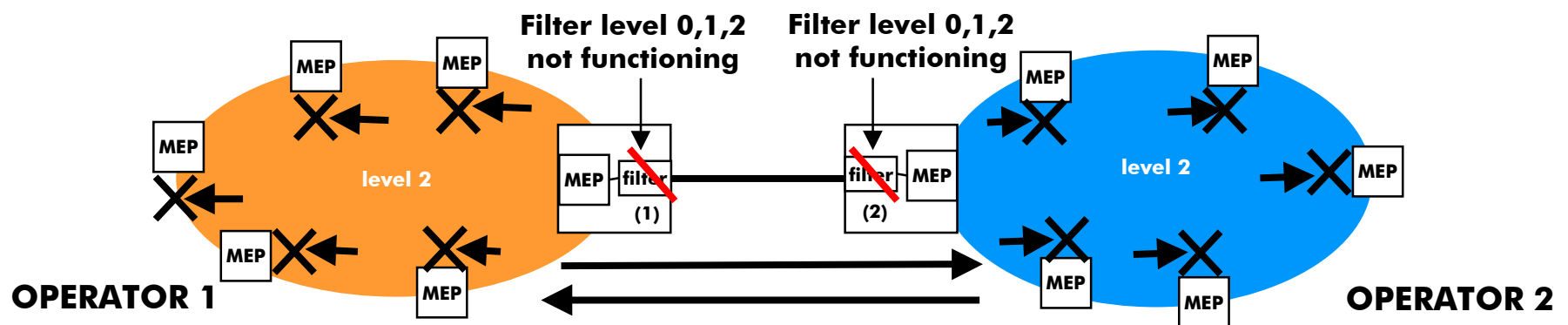
Problem: Inter-operator leaks



- > If both filter (1) and (2) faulty, CFM frames are not filtered
 - UUCSIID filtering needed at both MIPs + MEPs

UUCSIID filtering

- > Every MEP in the operator network first looks at the UUCSIID of a received CFM frame:
 - if its UUCSIID = authorized UUCSIID for the MEP à **CFM frame is processed**
 - if its UUCSIID \neq authorized CSIID for the MEP à **CFM frame is filtered**



Summary

Method for automatic CFM domain configuration

- > Automatic Level configuration of MIPs
- > Automatic Placement of MSPs
- > No inter-operator leaking thanks to UUCSIID filtering
- > No additional frames: Reuses CC frames that has the level and UUCSIID information

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