DRNI IBEBs

Rev. 2

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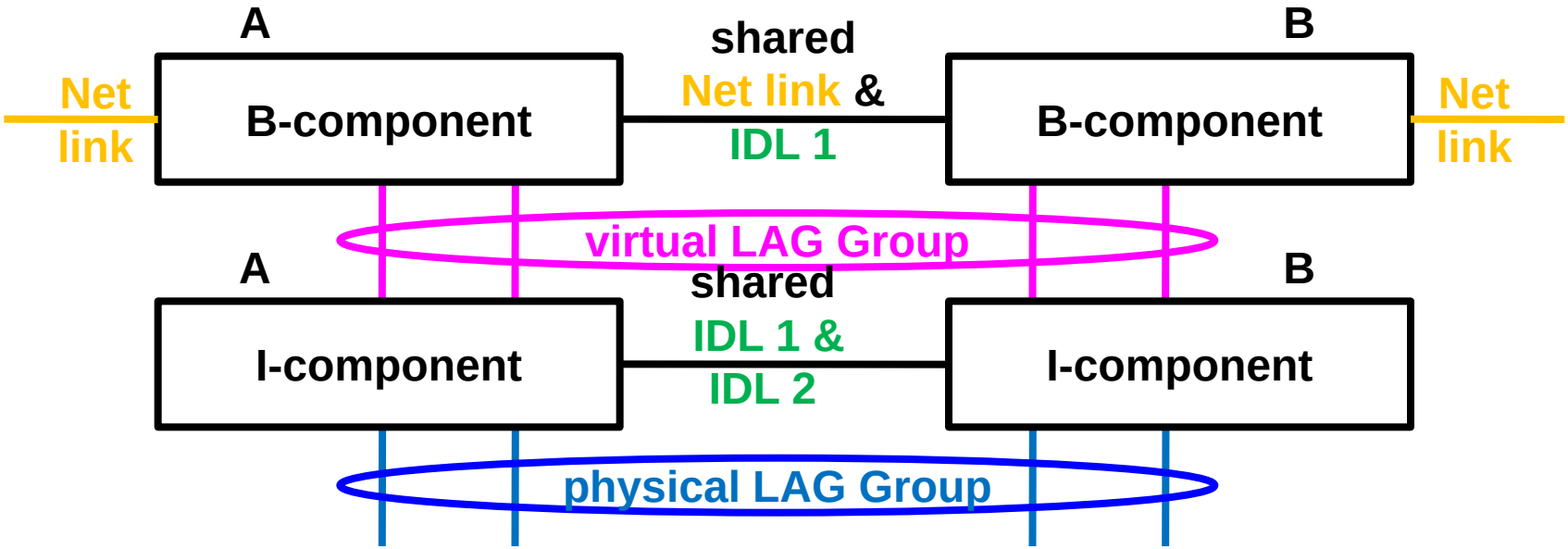
What is the IBEB problem?

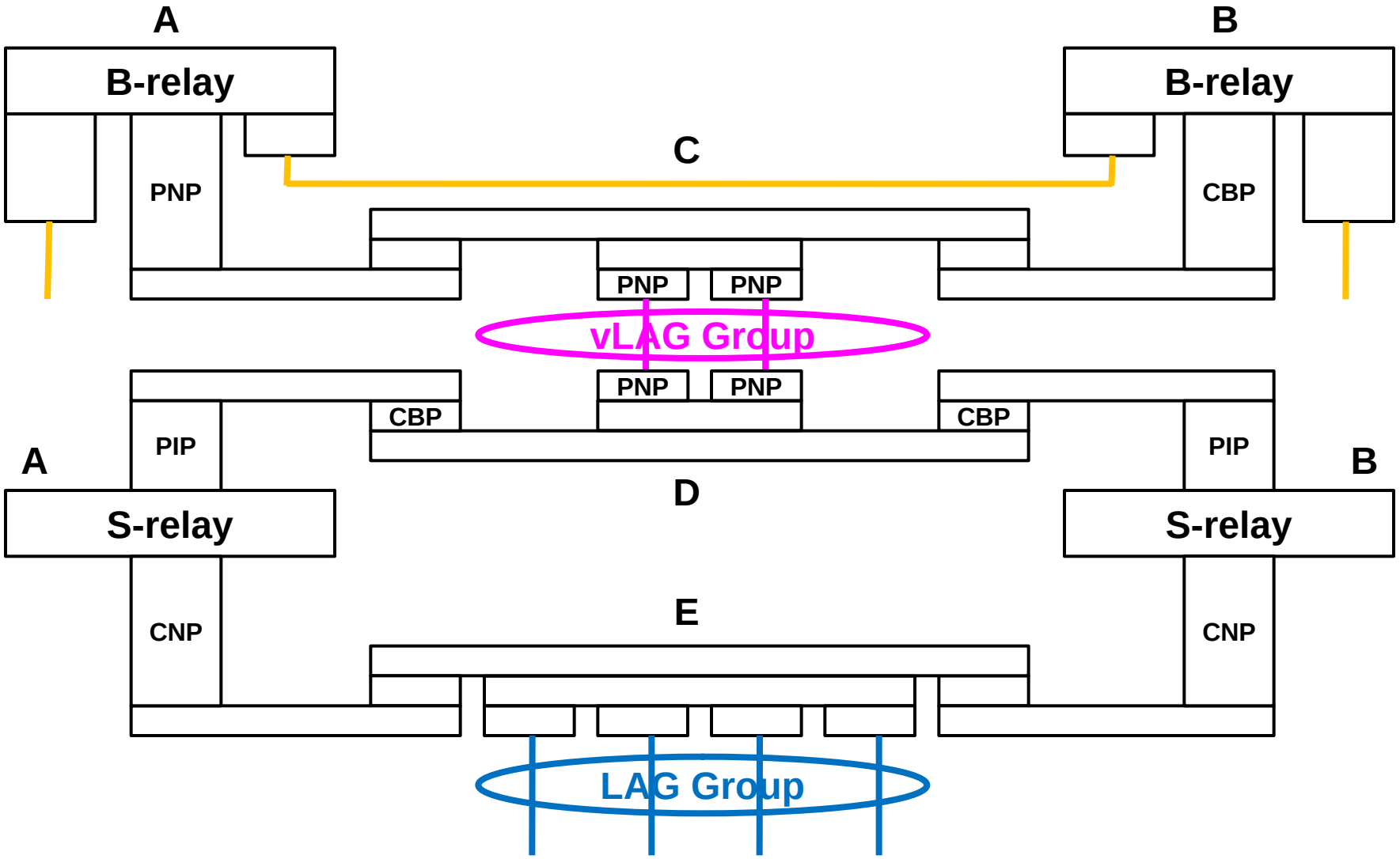
- Problem is that gateway selection in the I-component is based on service, but the gateway selection in the B-component is based on B-VLAN. One service can use two B-VLANs.
- In fact, the problem of differing gateway requirements bewtween the I- and B-components in one network are very similar to the problem of differing gateway requirements across the DRNI.
- So, you introduce **another, virtual DRNI**!

IBEB Component view



- The additional DRNI between the B-components and the I-components allows the gateways to be allocated so that shared learning is not required.

IBEB: Logical view



IBEB

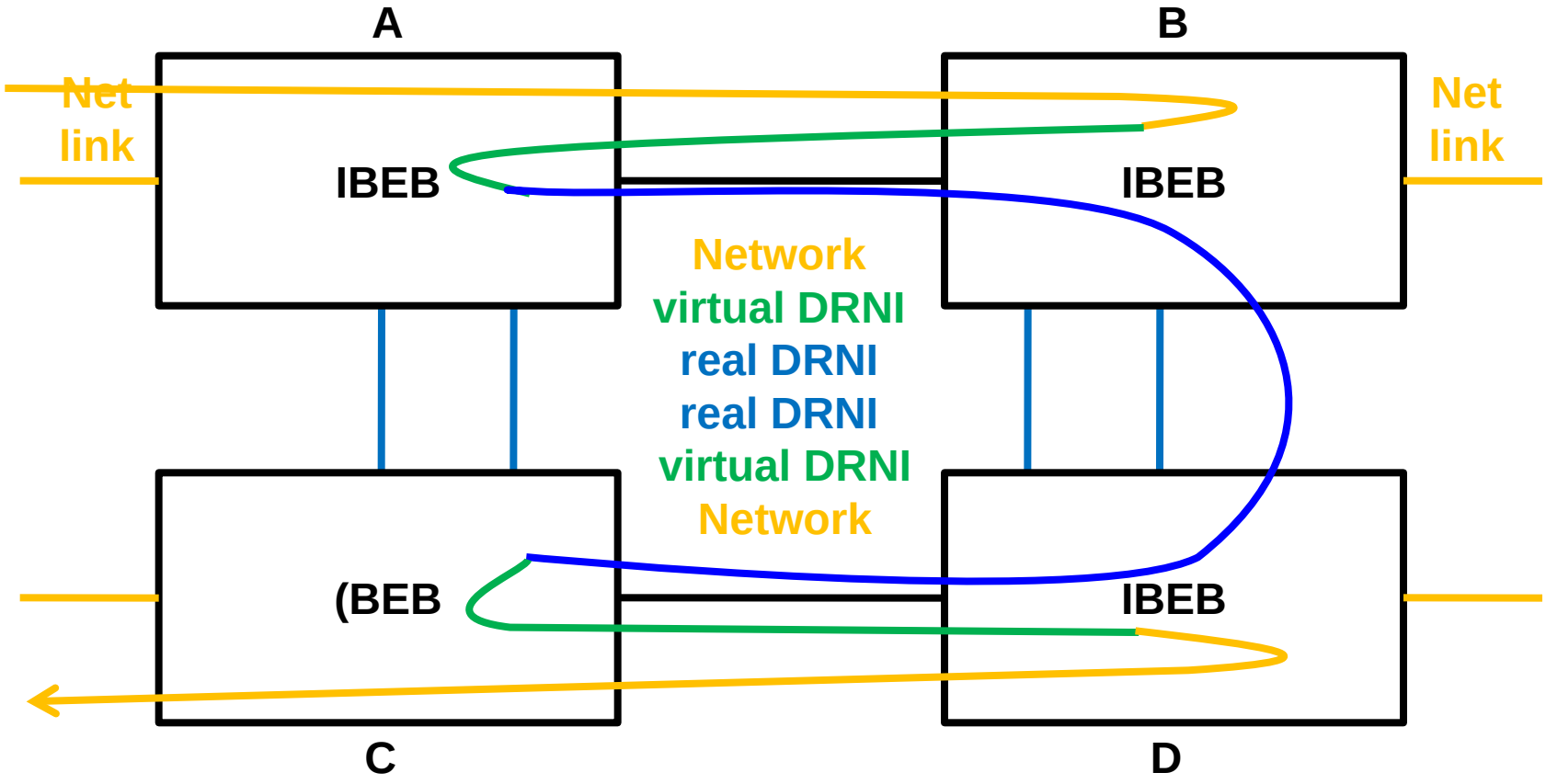
- Only one PIP/CBP per IBEB is shown. Multiple PIP/CBP links require multiple virtual DRNIs.
- The lowest virtual bridge (**E**) ensures that each service passes up through exactly one of the Portal's Nodes.
- The middle virtual bridge (**D**) has the CBPs, adding/removing B-tags.
- The upper virtual bridge (**C**) ensures that each B-VLAN passes through exactly one of the Portal's Nodes.

Virtual DRNI

The virtual DRNI is simpler than the lower DRNI:

- There is one vertical link per physical device.
- You do not need two intra-DAS links (encapsulations, really) for virtual bridges **C** and **D**. They are not needed for redundancy, since if virtual bridge **C**'s intra-DAS link fails, so does **D**'s. They are not needed for load sharing, because they are physically the same and belong to the same provider.

IBEB silliness



- **A frame could take this path!**

IBEB silliness

If one does not like having a frame criss-cross the diagram six times, then one can:

- Configure the systems so that the normal case is the most straightforward.
- Where there are no overriding reasons to the contrary, select service-to-B-VLAN assignments that are compatible with the neighboring network's selections, so that criss-cross movements are not needed.
- When failures force criss-crossing, you have a choice whether to take a flush/flood/learn event or a dual-homing shift as an alternate penalty.

My conclusion

- Let’s take another look at the MEP problem and see if this offers a handle for better solution.