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(It seems like the only way
to make Acrobat 7 happy.)

Spotting the Just-Right FDF 10-309v0

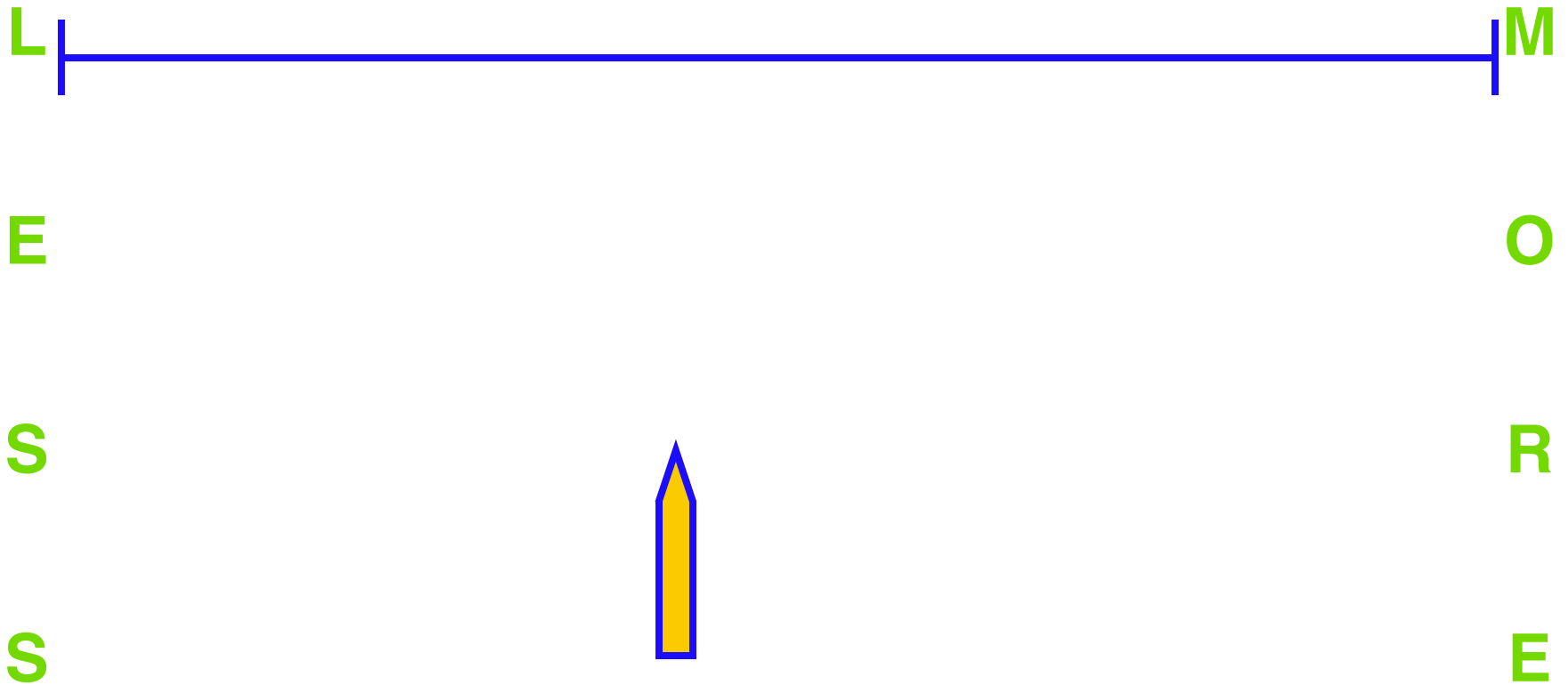
This presentation is the result of a hallway conversation in Minneapolis.

The main complaint was that FDFs were quickly becoming excessively complex and thus too formidable to build.

An additional incentive to take this step was the unexpected *success* of the [Jet Assist](#) proposal in April. If that offering was becoming a bell-weather notable-and-quotable document, why not take another stab at FC-BB-6 fame (or infamy, as the case may be).

In any case ... I have turned to the Manager of the [Car Talk Capital Depreciation Fund](#), Les Ismore to find an appropriately innovative mechanism to size-up some possible FDF options.

Less v More



Less v More

Here is the patented Les Ismore evaluation scale.

Less is on the left, **More** is on the right.

Between the two is the mystical, just-right region which is presumably the object of this group's collective desires.

A station-selection knob (pointer-thingie, *doo-dad*,...) helps remind us where we have currently landed.

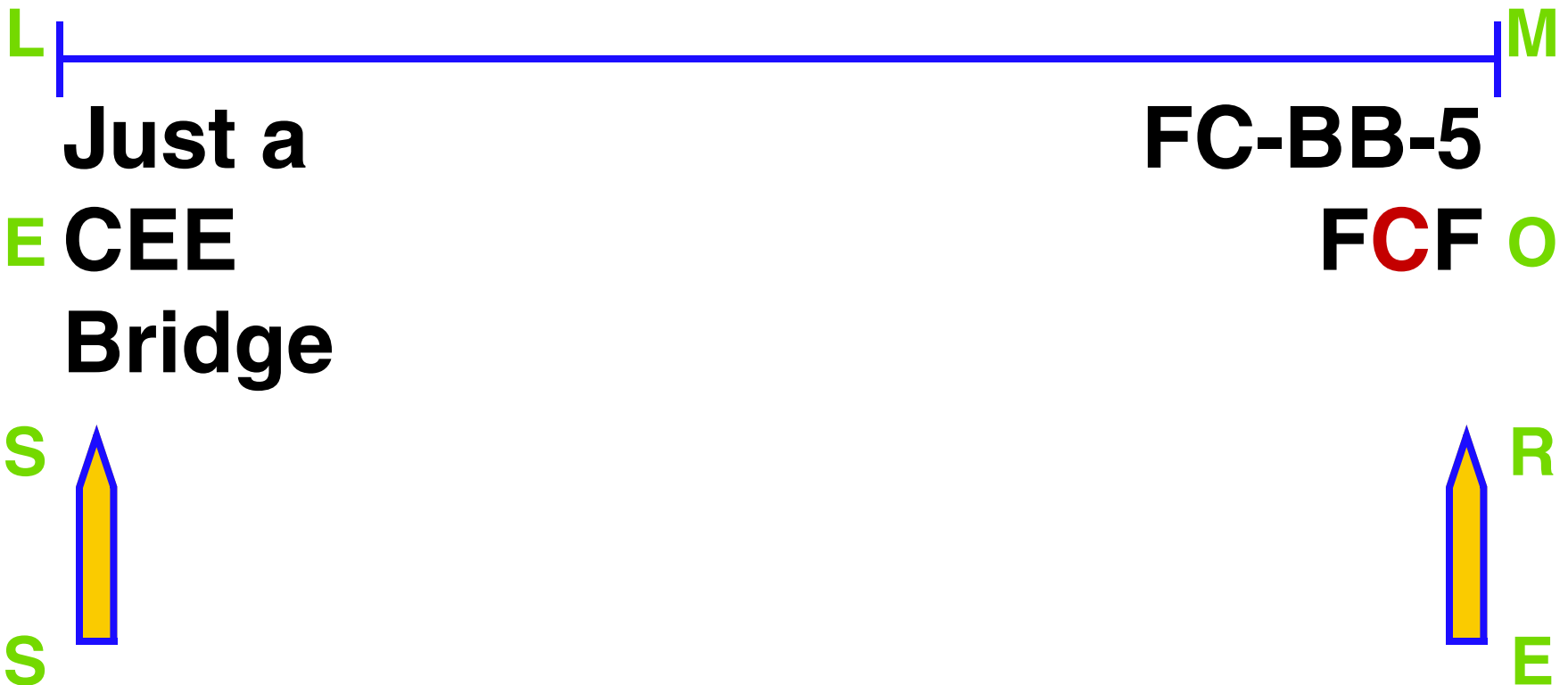
One other point is crucial!

For the purposes of this discussion, I am looking **only** at **less/more** in terms of FDF complexity.

An entire **Fabric** of other considerations can zing in from outside this universe to suggest adjusting the station-selection knob one way or the other.

Discussion of these issues is welcomed, but complaints about the narrow-mindedness of the FDF-only criteria will be ignored. (I get confused easily, and this noticeably smaller patch of turf seemed like more than enough to attempt to handle in this meager presentation.)

Maximum Less Littlest More



Maximum Less — Littlest More

Picking the end-points for the Les Ismore scale is easier than it looks.

It is very difficult for a device to contain less Fibre Channel functionality than **none**. So, a native CEE Bridge constitutes my least **less** FDF choice (as far as possible to the left-hand side).

Giving credit where it is due, Dave Peterson suggested the mostest **more** case on slide 4 of [10-233v0](#) by proposing the following FDF design requirement:

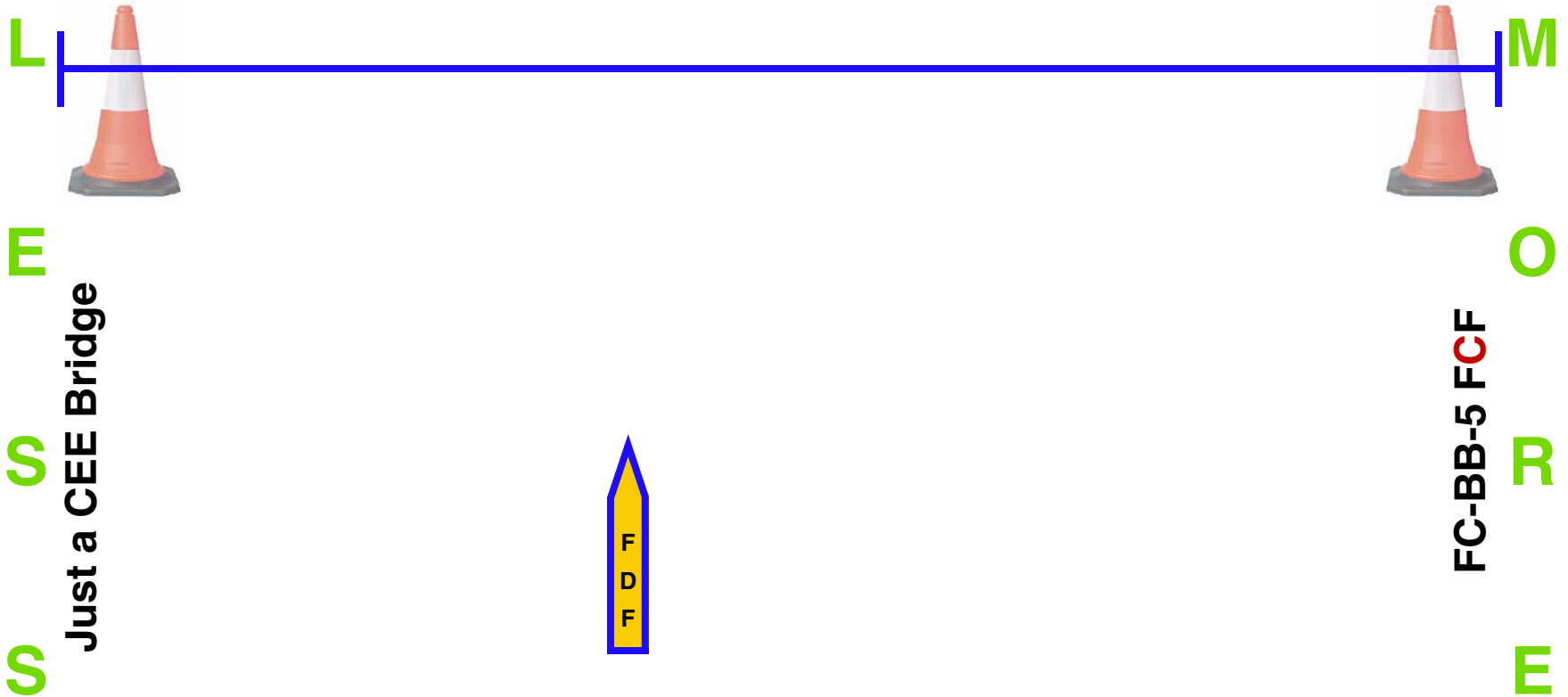
"Each FDF may become an FCF (i.e., a standby FCF)"

If there were any more functionality to stuff into the FDF bag, surely it would have been forced into an FCF's definition already.

With the two end-points thus clarified, we are ready to investigate the middle.

But ...

Maximum Less Littlest More



Maximum Less — Littlest More

One final note is in order.

Both of the Les Ismore end-points are represented in the designs shown by FC-BB-5.

Although it seems somehow weird, both edge-cases can be characterized as falling under Silvano's slow-down-cones concept.

No matter how much I reflect on this observation, I cannot decide whether this is good news or bad news.

We are definitely in a construction zone here:

- Cones to the left,
- Cones to the right,
- **Drive carefully ahead!**

Known? Quantity

L



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Just a CEE Bridge

S

S

M



O

FC-BB-5 FCF

R

E

- FCoE + A_Ports
- [10-271](#)
- FIP Discovery
- ELP SW_ILS
A_Port Link Init.
- Forwarding
- Zoning



F
D
F

Known? Quantity

Drawing FIP frame formats can get you in **a lot** of trouble.

In this case, Claudio DeSanti's proposal ([10-271](#)) becomes Guinea Pig Number One for the Les Ismore treatment.

The *re-invention* of A_Ports might be questionable, but look closely:

- A new (previously unknown) Forwarding functionality lives in this unique variation of the FDF vision,
- This may allow the FCF-to-FDF link to clear the very high threshold set by Steve Wilson in the No-New-Ports rubric.
- Fun, fun, fun 'till daddy takes the T-Bird away, eh!

Personally, I am pleased to see a clear separation between:

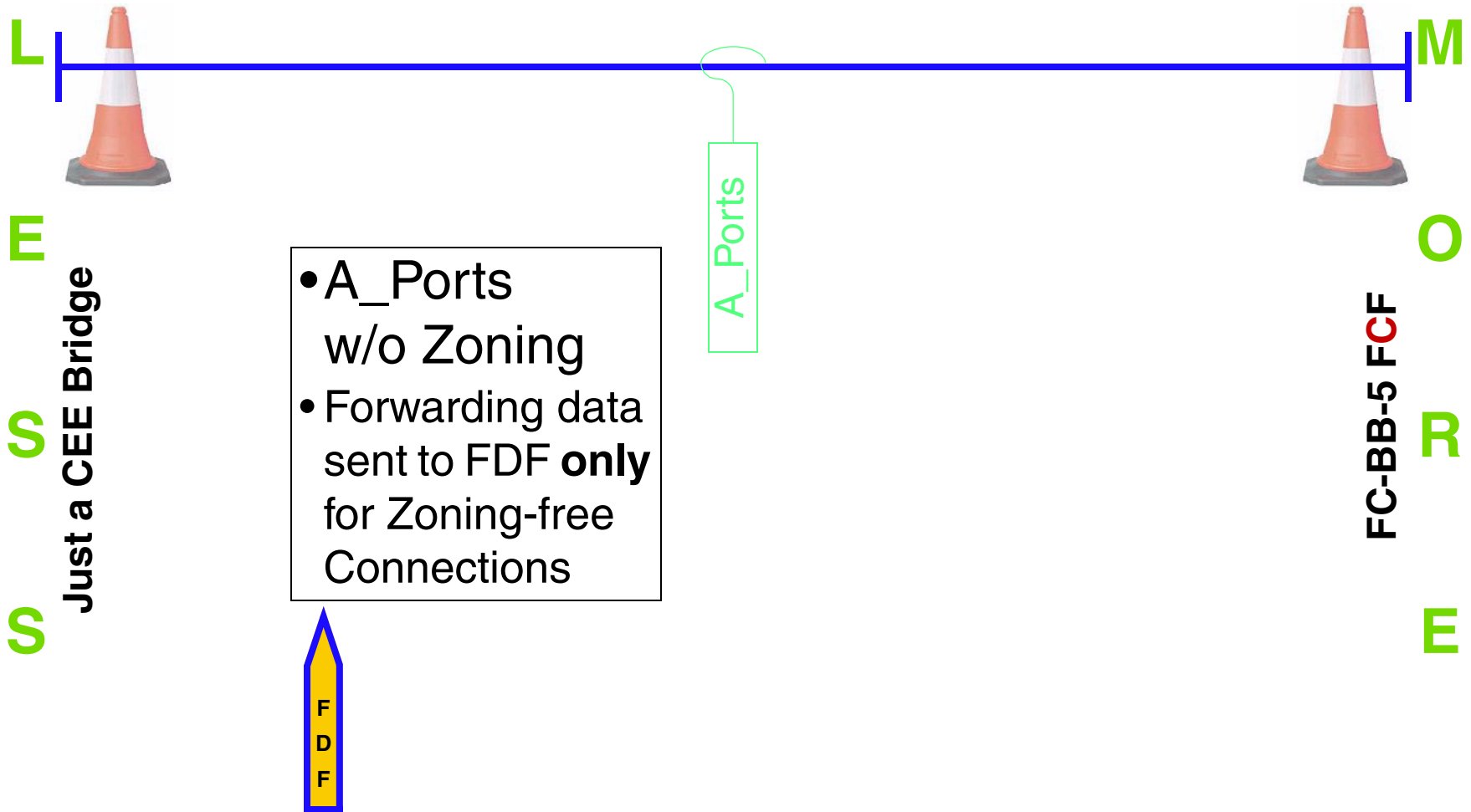
- FIP – Discovery & Link Preparation **only**
- Fibre Channel ELP SW_ILS *Forwarding-Link* (aka A_Port) creation

Among other things, this means that A_Ports need not be an FCoE-only architectural artifact. (Continued vigilance is needed to keep this true!)

As promised by Silvano, [10-271](#) delegates all Data Plane functions to the FDF:

- Neighborly Forwarding
- Zoning

Downsizing



Downsizing

On the subject of simpler FDFs ...

Claudio's description of the Zoning interactions sounded like a major headache. Every FLOGI anywhere in the Fabric seemed poised to cause time-consuming reconfiguration inside every FDF, everywhere.

- Could there be a way out of this maze?
- Yes ... **but** there is a price to pay!

A Controlling FCF that knows one or more of its FDFs lack Zoning capabilities could *doctor* the Forwarding tables sent to those FDFs to remove the *Neighbor Entries* that have Zoning requirements.

In a nutshell ...

If the FDF does not do Zoning, then the Controlling FCF must do it!

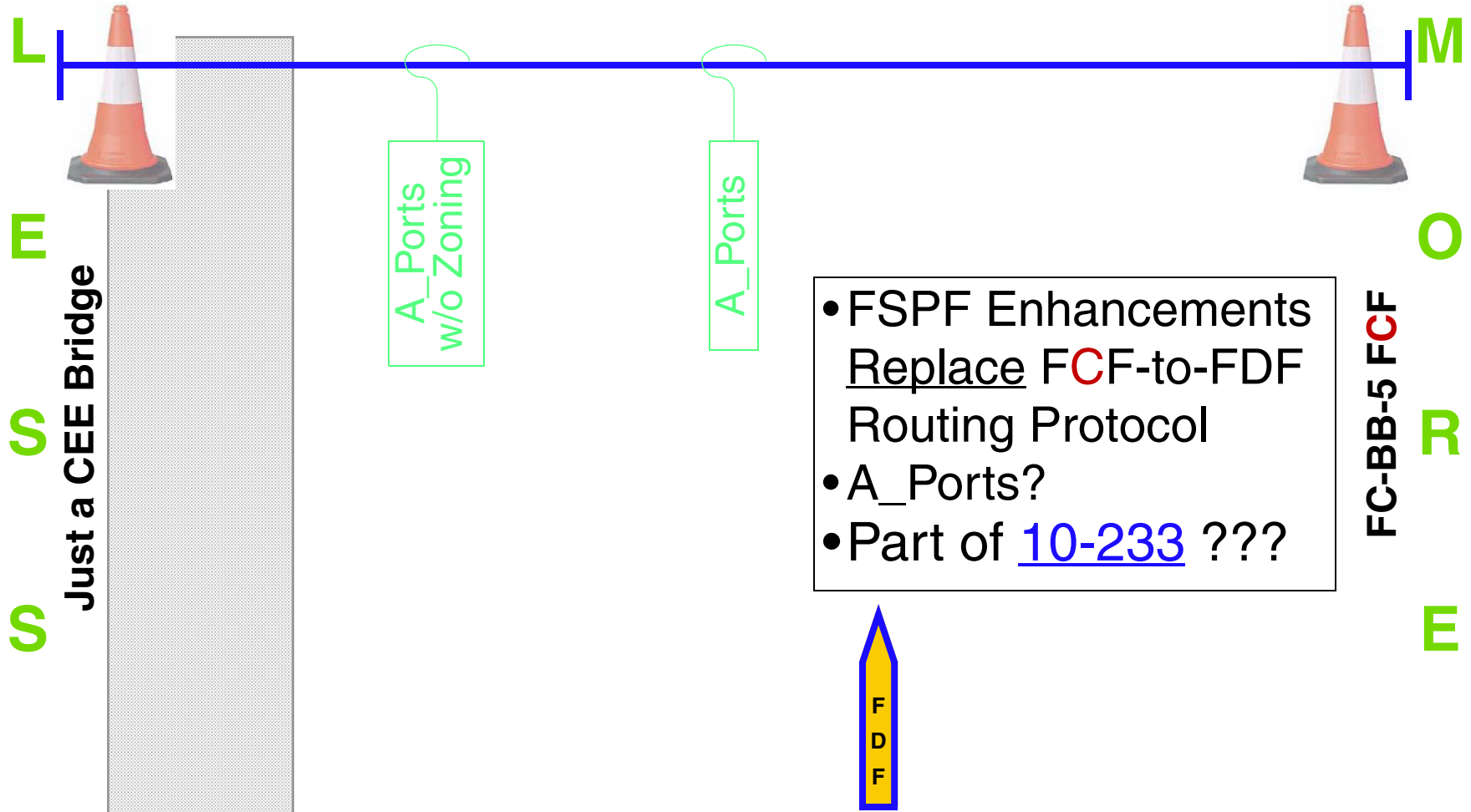
Of course, this means all the *Neighborly Forwarding* advantages of FDFs go down the drain whenever Zoning enters the picture. Ugh!

Another Alternative

A half-and-half solution might be to keep all the [10-271](#) Zoning-updates interactions between FCFs and FDFs as proposed, but:

- Let the FDF choose not to enforce a Zone here or there (due to resource limitations, perhaps)
- This would oblige the Controlling FCF to always enforce Zoning – even in those cases where it thinks the FDF should have done it (This might not be such a bad rule to have in any case.)

FSPF is Our Friend



FSPF is Our Friend

The grey region between A_Ports w/o Zoning and CEE Bridges in this figure is my way of saying that options may exist between these two but I cannot divine them.

Now, the **More**-than-A_Ports options need to be considered.

This means we have reached the point where the benefits (and costs) of eschewing frame format definitions become obvious.

Perhaps it is a knee-jerk reaction, but ...

- Asking FDFs to implement FSPF seems like a clear added burden, which is why this option edges closer to the **More** side of Les Ismore's graph.
- On the other hand, FDFs are performing a Forwarding functions. Maybe some kind of Full-Disclosure principle obliges FDFs to properly play ball with FSPF for the Fabric to function correctly.

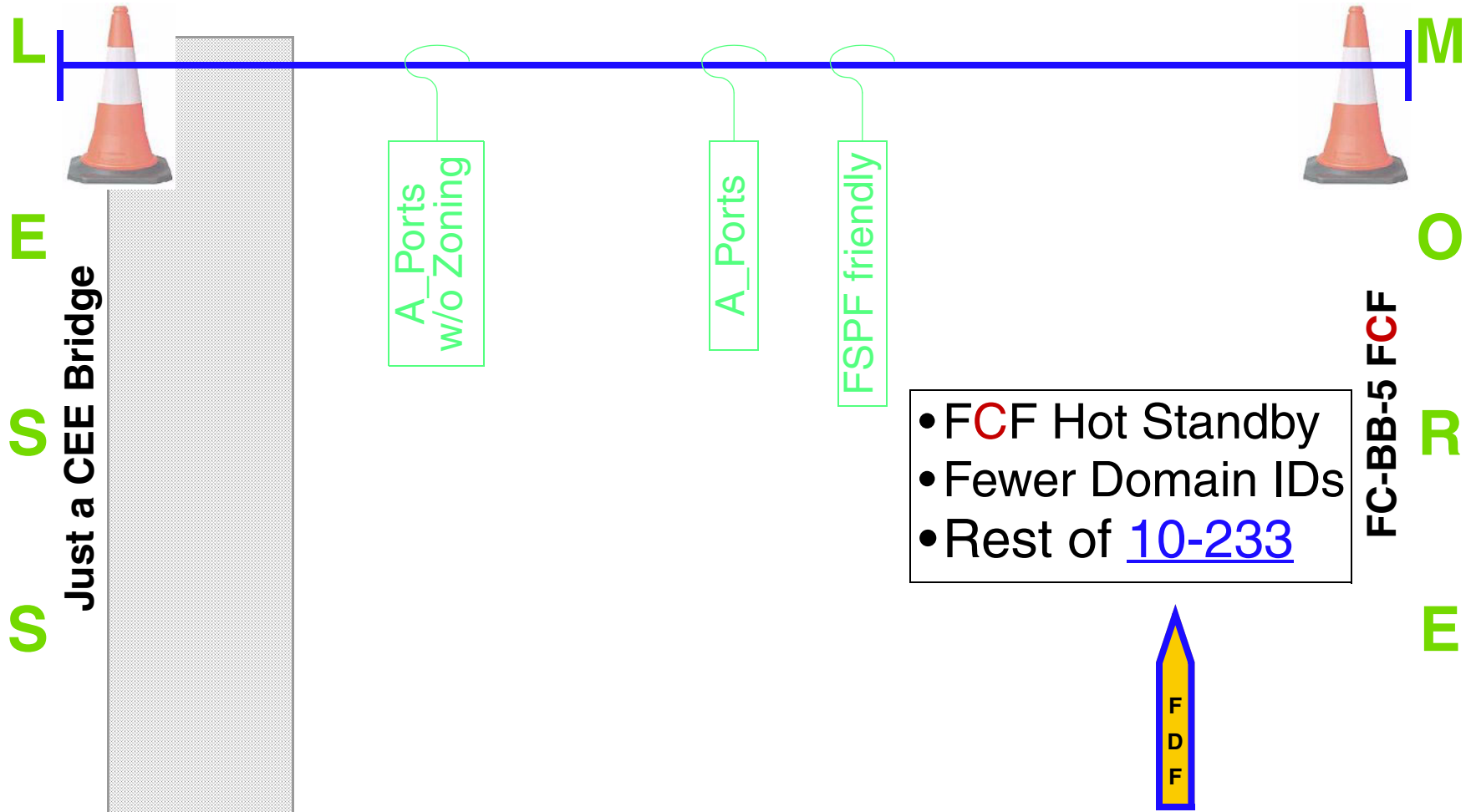
One clear downside to keeping FDFs out of FSPF is the absence of any ability for FDFs to *Neighbor-up* with FDFs with whom they do not share a Controlling FCF.

- Is this a compelling issue?
- The Ouija board refuses to tell.

Are A_Ports needed in this architecture? The jury is still out.

The *experts* at Mirky Research Inc. (Paul Mirky, president) have seen this scenario time and again. What is needed is a more reasoned airing of the motivating factors on all sides.

All the Way... Almost



All the Way ... Almost

Viewed strictly from an FDF perspective, having an FDF that is almost (but not quite) an FCF seems like nonsense.

This overlooks one critical point.

"It's the Domain ID, stupid!"

A pair of related questions come to mind, however:

- How does an FDF/FCF decide which way it is going to swing?
- When does it do this?

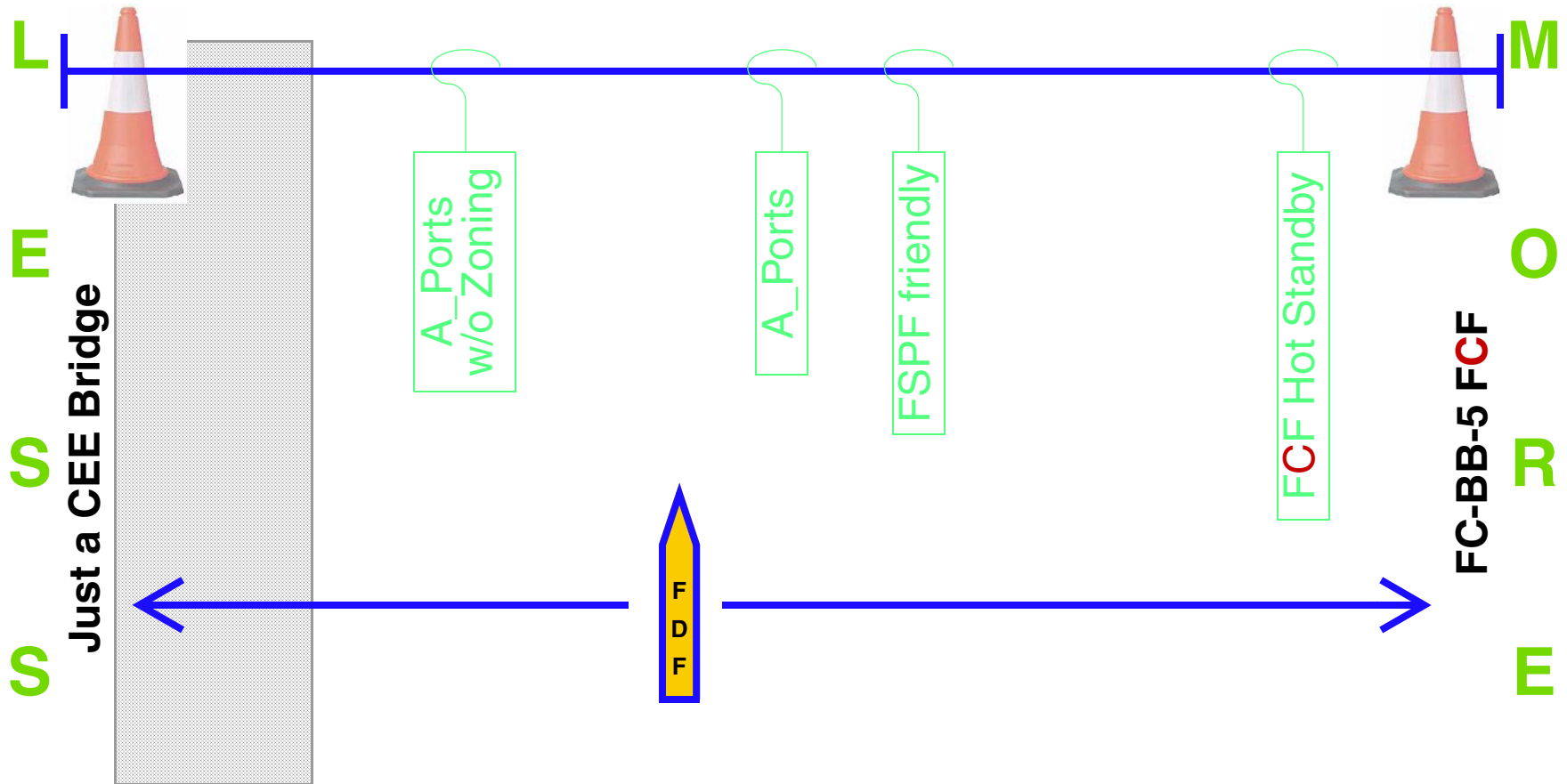
The FIP enhancements which probably will need to be added to accomplish this could be *interesting*, n'est-ce pas.

- Underlying knowledge of the STP configuration might top the list of inputs, but ...
- Various expert Ethernet presenters have described notions which strongly suggest that the means for obtaining such information is outside the scope of any published (or proposed) standard.

If Hot Standby plan turns out to be *a-little-bit* Vendor Specific, a difficult-to-resist temptation will be to make the whole ball of wax likewise Vendor Specific.

Ancient Chinese Proverb
"May you live in interesting times."

Checkout Time at the FDF Buffet



Checkout Time at the FDF Buffet

So, there you have it! ...

- a bevy of alluring FDF dining choices
- from across the Les Ismore spectrum

May the one you pick not give you gas (or worse).