Considering Wider Implications of the Frame Format Choice

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Special Case of a More General Choice

- **Formats A and B are special cases of a more general choice.**
- **We've been concentrating on a special case:**

  on FDDI, the "inside" frame is:

  Choice A: in Ethernet format

  Choice B: in FDDI format.

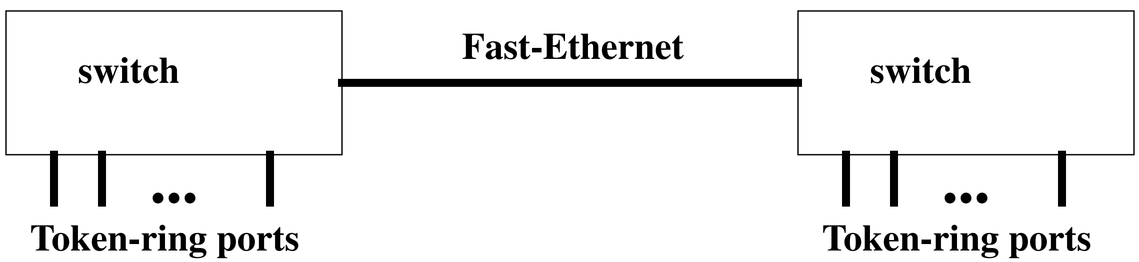
- **The more general choice is:**

  —one (or more) canonical formats, or

  —the frame format always matches underlying media type.

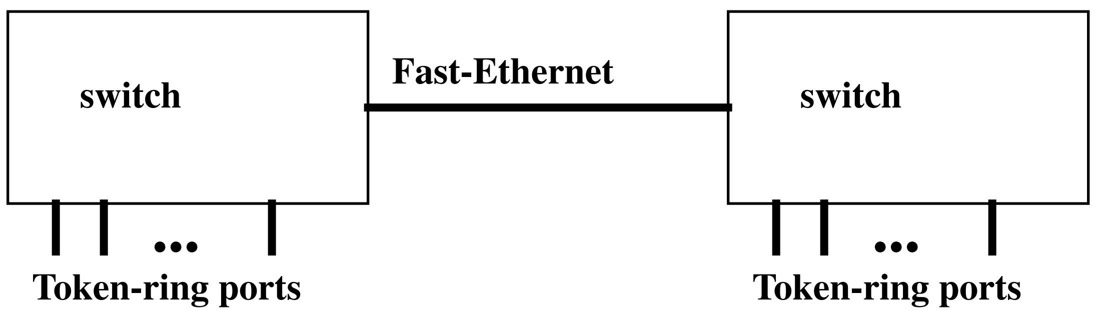
Wider Context (i)

- Two-level tagging
  - —we should make the same choice for one-level tagging and two-level tagging
  - —a benefit of two-level tagging is allowing 802.5 Source Routing to be carried over other media



Wider Context (ii)

- **Token Ring**
  - **—every time we say FDDI, also need to remember Token Ring**
  - **—how practical is Token-Ring <-> Ethernet at line-speed ??**
  - **—when Fast-Ethernet used to interconnect two token-rings, translational bridging at both ends is bad.**
  - **—requiring Token-Ring hosts to generate Ethernet format frames when end-system tags a frame is bad.**
  - **—requiring Token-Ring switches to have to translate to Ethernet format when tagging a frame is bad.**



Wider Context (iii)

Self-defining format

- **if we allow two formats on the same media, then:**
  - **—because of RMON probes, mis-configurations, and etc.,**
  - **—useful to have indication, in each frame, of which format is in use**

Wider Context (iv)

LAN Emulation is relevant in two ways:

- LANE faced the analagous choice,

- Compatibility with the choice LANE made

The Debate in LANE

- **There were two competing proposals:**
  - **—a single canonical format, or**
  - **—separate formats for each of: Ethernet, Token-Ring, FDDI, ...**
- **The compromise:**
  - **—just two formats: a) Ethernet, b) Token-Ring**
  - **—each ELAN uses only one of these formats (cf. ELAN type)**
  - **—this avoids hardest type of translational-bridging**
  - **—also avoids open-ended set of formats**
  - **—FDDI can be matched to either format**
  - **—adding FDDI as an additional type was later re-considered, but still rejected**
  - **—effectively, two canonical formats.**

So, what about A versus B ?

- **The LANE-compatible choice is:**

  on FDDI, the “inside” frame is:

  Choice A: in Ethernet format

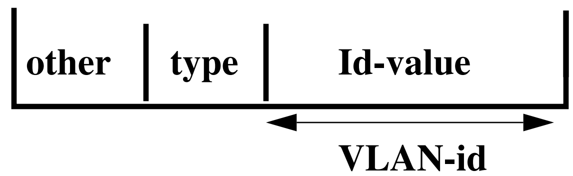
  on Token-Ring, the “inside” frame is:

  Choice B: in Token-Ring format.

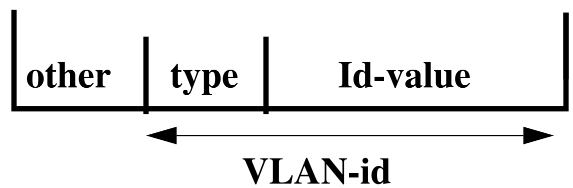
Does this Require a VLAN Type ?

It depends, on choice of:

- **No, if separate bit for format-type outside VLAN-id:**



- **Yes, if explicit bit for format-type inside VLAN-id:**



- **Yes, if each VLAN-id uses one format, but no explicit bit:**