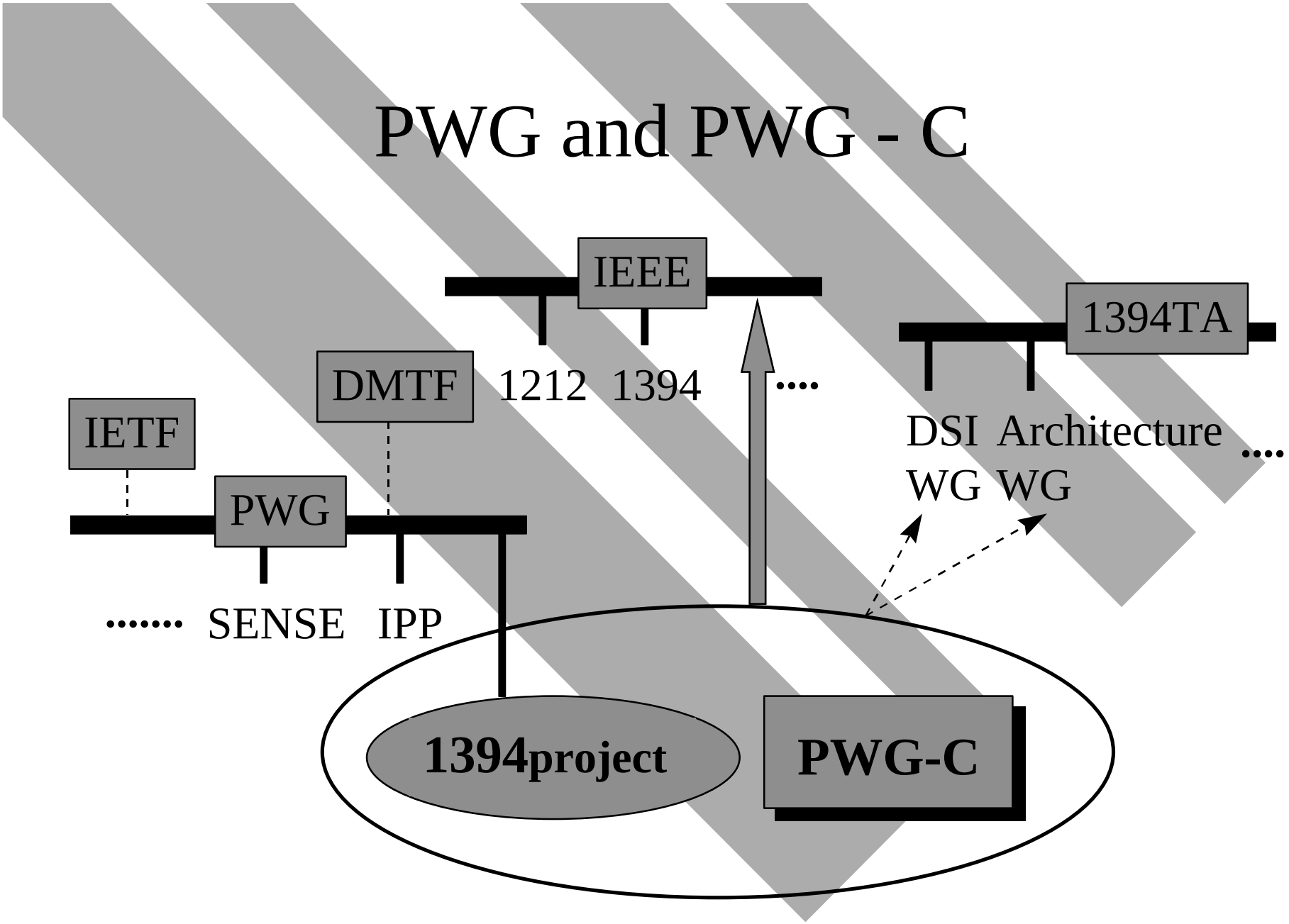
Function Discovery Protocol

PWG - C

PWG-1394 project

PWG and PWG - C


IEEE
1394TA
DMTF
1212 1394
....
IETF
DSI Architecture
WG WG
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PWG
SENSE IPP
.....
1394project
PWG-C

Terminology-1

.....discussed at PWG-C meeting in June

- **Device (node) Discovery**
  - mfr,model# of node
  - 1394.x support
  - unique ID (serial number,GUID?)
- **Unit (function) Discovery**
  - functional unit class (ex. printer)
    - not categorization by protocols
- **Low-level service Discovery**
  - availability of lowest layer above 1394 transaction layer-datalink
- **High-level service Discovery**
  - high -level service information

Terminology-2

.....defined at PWG meeting in May

- **Transport**
  - set of layers above the 1394 transaction layer
  - **Thick Transport-PC printing stack**
  - **Thin transport-Peer to peer stack**

- **Datalink**
  - lowest layer above 1394 transaction layer

Function **D**iscovery **P**rotocol (FDP /based on Canon-DDsrP) - Objective

- **Objective:**
  - Provide a **"shortcut" method for IEEE1394 Function Discovery.**
    - "Discover the unit functions first, then their supported protocols (and ID)."

    as an alternative to current "protocol-first" discovery.

Function **D**iscovery **P**rotocol (FDP /based on Canon-DDsrP) - Functions

- **Functions:**
  - Main Function = **Discovery of**
    1. Device(1394.x compliant node)
    2. Function (units)

       Provide a single block **Function-unit list**
    3. Low-level service (of each function)

       Provide a single block **Protocol -list with function-unit ID** for each function
  - Sub Function = Minimum (login-less) unit status retrieval.(error/no error, unit active/non active)

Function **D**iscovery **P**rotocol (FDP/based on Canon-DDsrP) - Features

- Features:
  - Use CSR architecture.
  - **NO** CONFLICT with existing Config.ROM definitions (ex.Unit_Directories of SBP-2, FCP...) - which discover the protocols first....
  - Global.....Device/Function (unit) independent

Positioning of FDP

1)Incorporate into IEEE1212

- define a dedicated key_value(17h-2Fh) and field for FDP in the Root Directory of IEEE1212.
  - -to point to a FDP (root-dependent)directory.

2)Incorporate into IEEE 1394

- define a dedicated key_value(30h-37h) and field for FDP in the Root Directory of IEEE1394.
  - -to point to a FDP (root-dependent)directory.
  - -ex. IEEE1394 power management (30h)

FDP Usage and Information retrieved

step1: DEVICE(node) INFO. (Function unit directory)

readout of

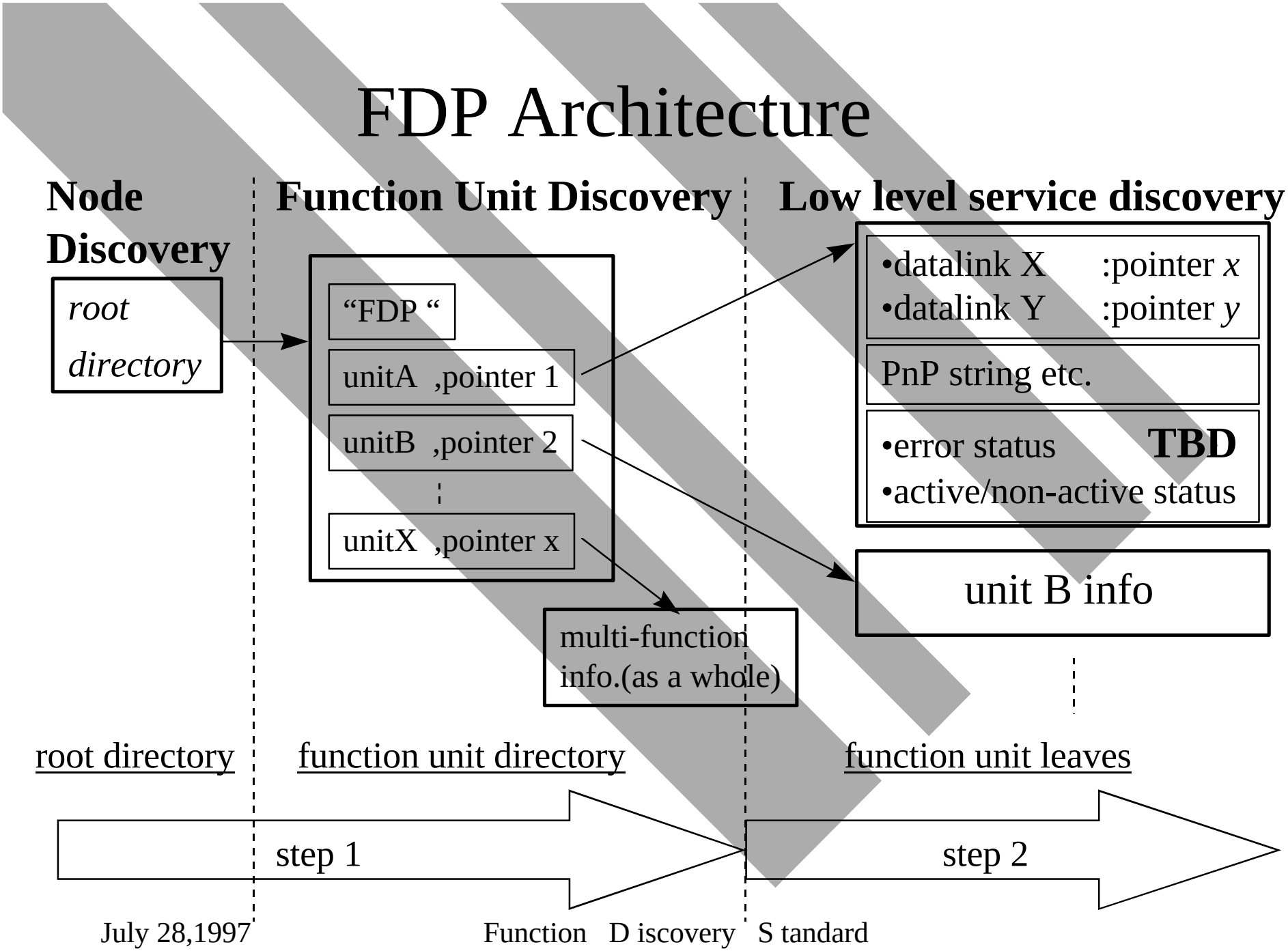
1. node description(=FDP device)
2. supported function (units) and pointer to unit “leafs”

step 2: FUNCTION UNIT INFO.(Function unit leaf)

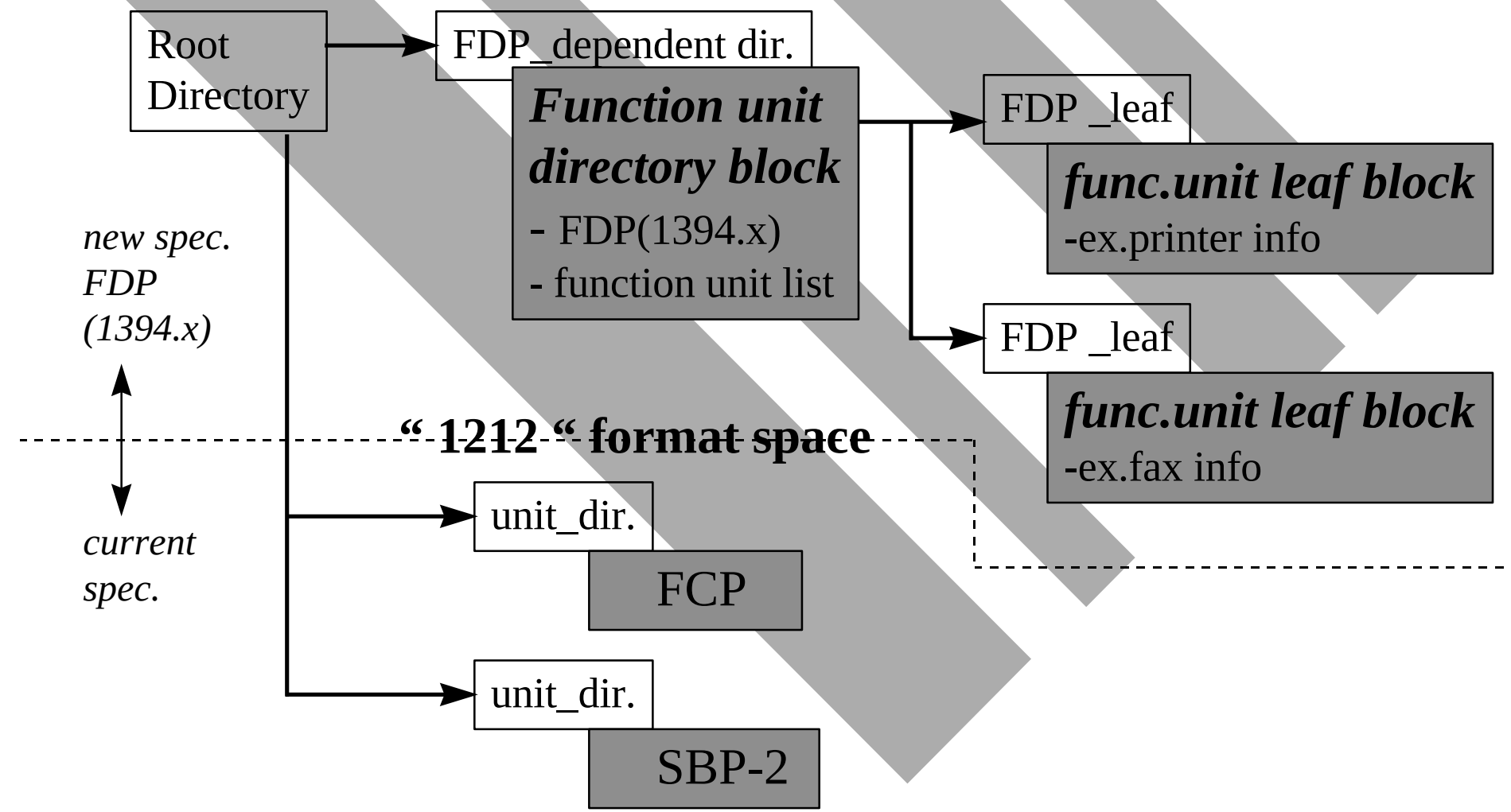
readout of

1. supported “datalinks” of unit(function).
2. Unit ID string (PnP)
3. vendor unique information
3. Unit status(....**TBD**)

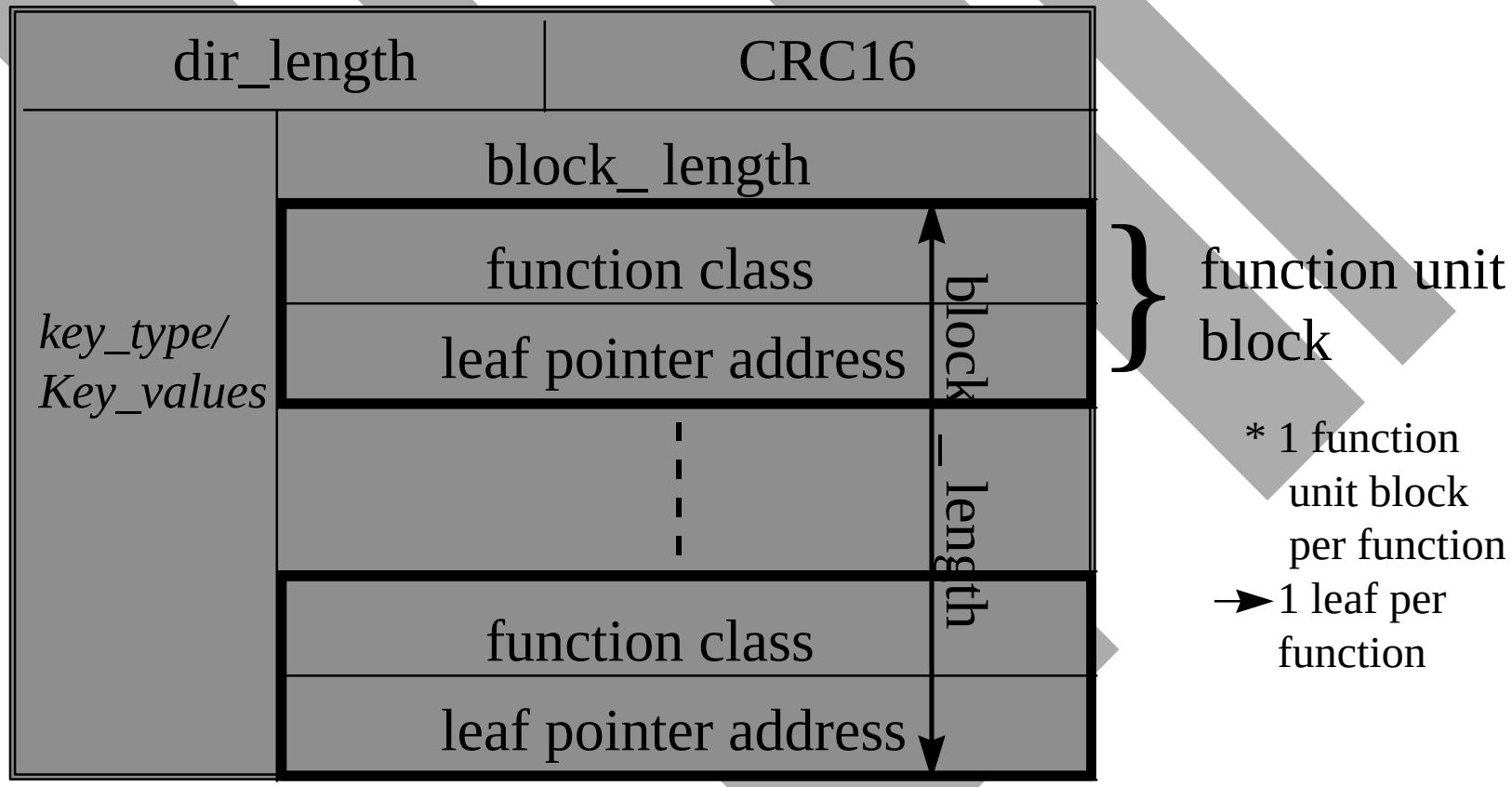
FDP Architecture



FDP implementation

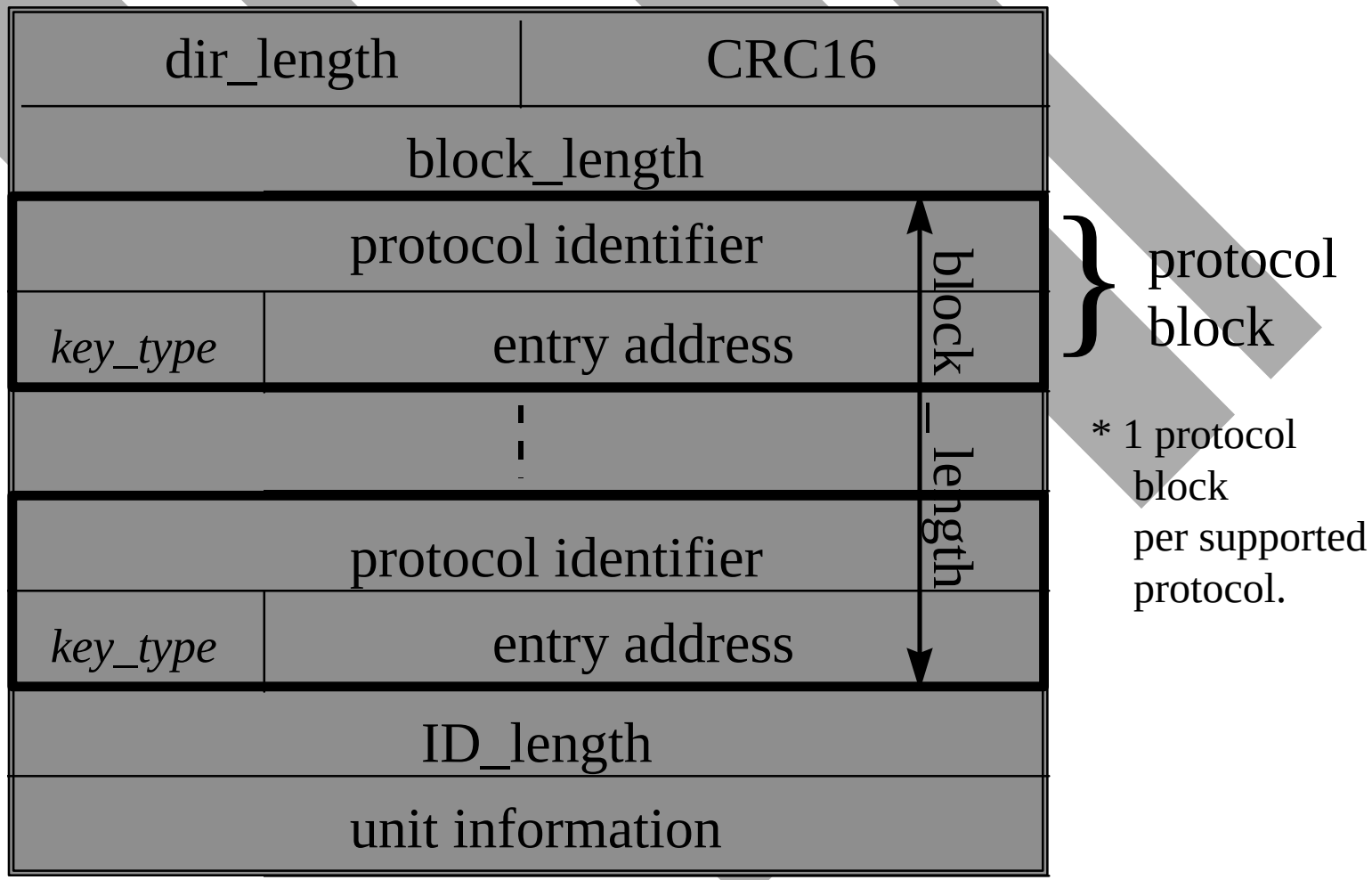


FDP Function unit directory -basic architecture



* *does not include all fields for explanation purposes*

FDP Function unit leaf -basic architecture



* *does not include all fields for explanation purposes*

Issues

- Categorization of function unit “types”
  - Does any suitable (global) registry exist?
  - Do we make the registery extensible?
- Datalink (protocol) Categorization
  - Naming....(Use same name as Unit_spec_id,sw_version?)
  - Support for vendor unique protocols
- (Login-less) Status retrieval...Do we need it ?
  - detailed information?, or minimum(error/ok) info.

Contact

- Documents at
  - ftp://ftp.tokyoweb.or.jp/pwgc1394/pub/proposals/canon/
  - http://www.pwg.org/p1394/documents/