

IEEE 1394 Printer Specification / Protocol

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Purpose

- Providing an Easy way for Printers to print from various devices.
 - *Plug and **Print** : Connect a printer to anything and print!*

Scope

■ The Protocol will cover

- Print Servers
- Bit image printers
- PDL Printers
- Multifunction devices
- Video printers
- Plotters

...and future printers!

Concept

■ Printers can **connect directly** to :

- AV devices
- PC peripheral (input) devices (ex. scanners,DigiCam)
- of course... PCs
- and more!

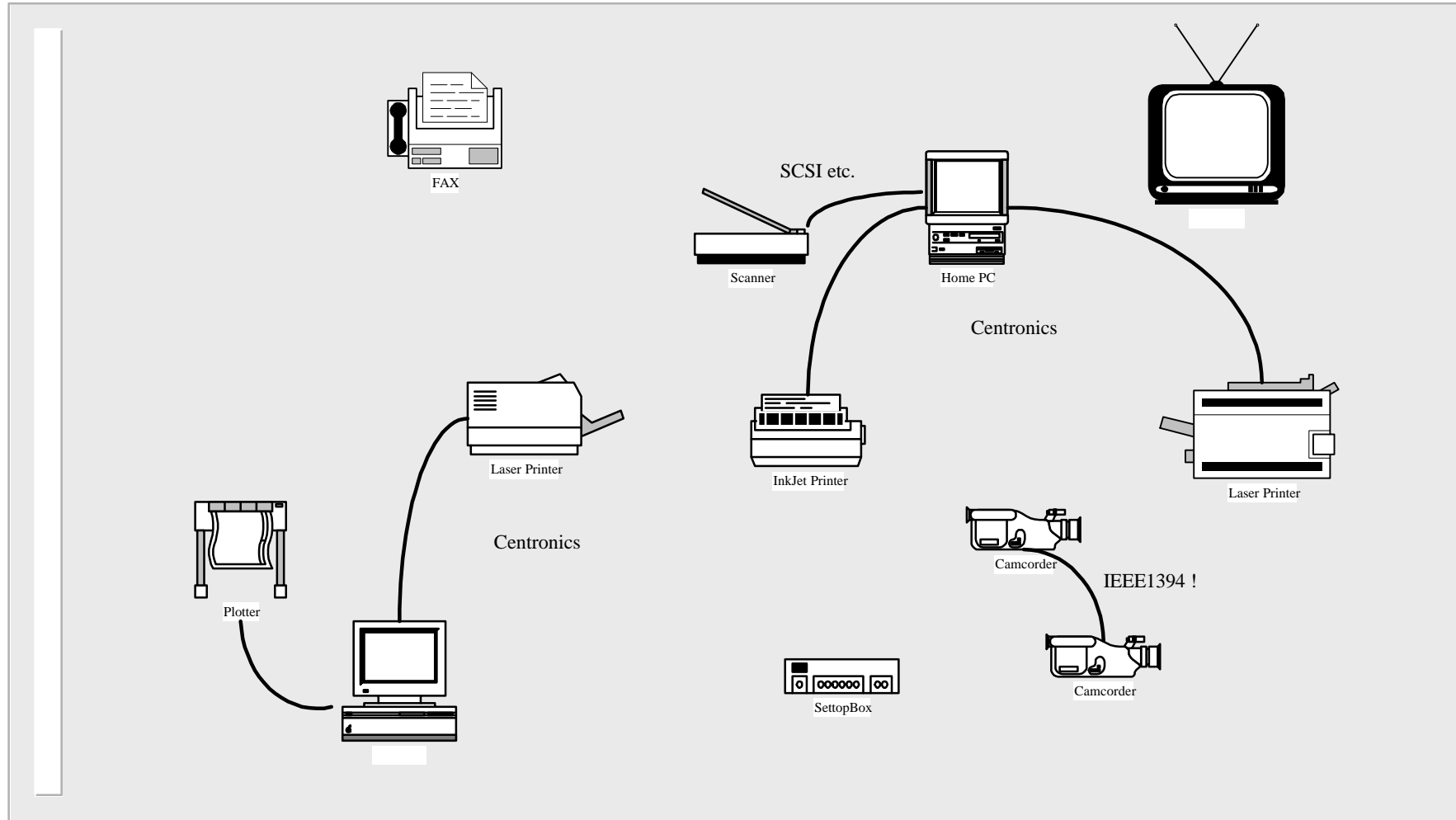
...Printers can talk to anybody !

■ Printer implementation will be easy

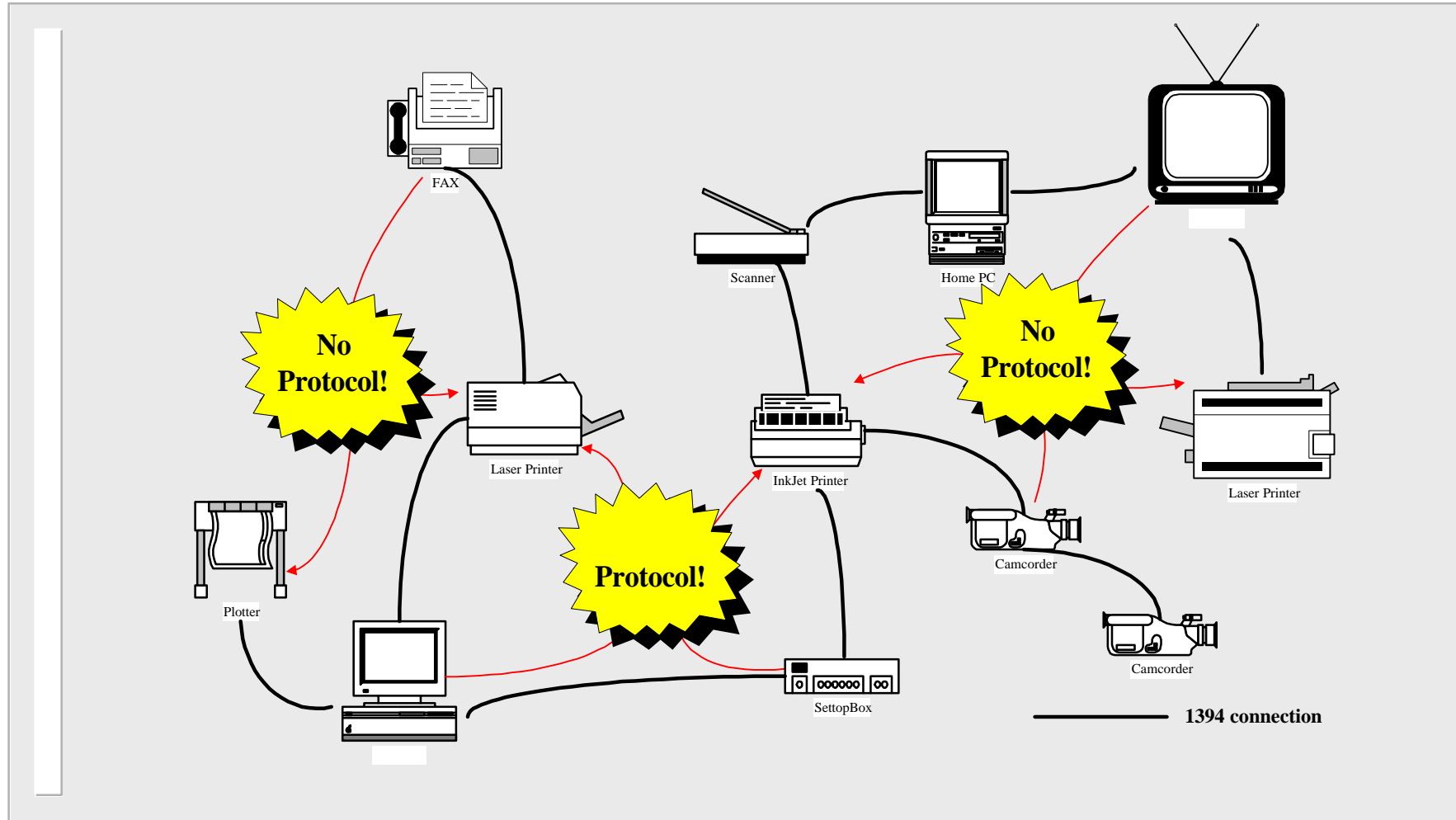
- The spec. will support existing I/F resources.
- The spec.will also present a ideal direct-printing protocol at the same time!

...Plug n' Print !

Connection Today...



IEEE1394 Today



Make the Most of 1394!

- Legacy I/O Interfaces (Centronics, USB etc.) are based on PC connection.

- 1394 can also establish

DIRECT CONNECTION of

- Consumer AV devices
- Computer Peripherals

with the Printer!

Why not support Both!

Solution

* noted later

- Definition of a IEEE-1394 Printer Class Protocol which includes ;
 - A common login / multi-protocol switching method **...”Login Protocol”***
 - Reason : Multiple printing protocol- support leads to flexible and easy implementation.
 - A minimum-load printing protocol aimed at AV / input devices **....”Direct-Print Protocol”***
 - Reason : A need for common peer to peer printing protocol that defines *asynch. data formats(iso. optional)* and *printer controls*.

“Login Protocol”

■ The Definition of “Login Protocol”

- A simple connection sequence consisting of:
 - Inquiring current printer status
(Lock/Unlock, transport protocol in use)
 - Locking on to the printer
 - Inquiring printer capabilities (transport protocol(s) supported)
 - Enabling a transport protocol
- Maybe used for other devices in the future?

“Direct-Print”

■ The Definition of **Direct Printing**

– Direct Printing :

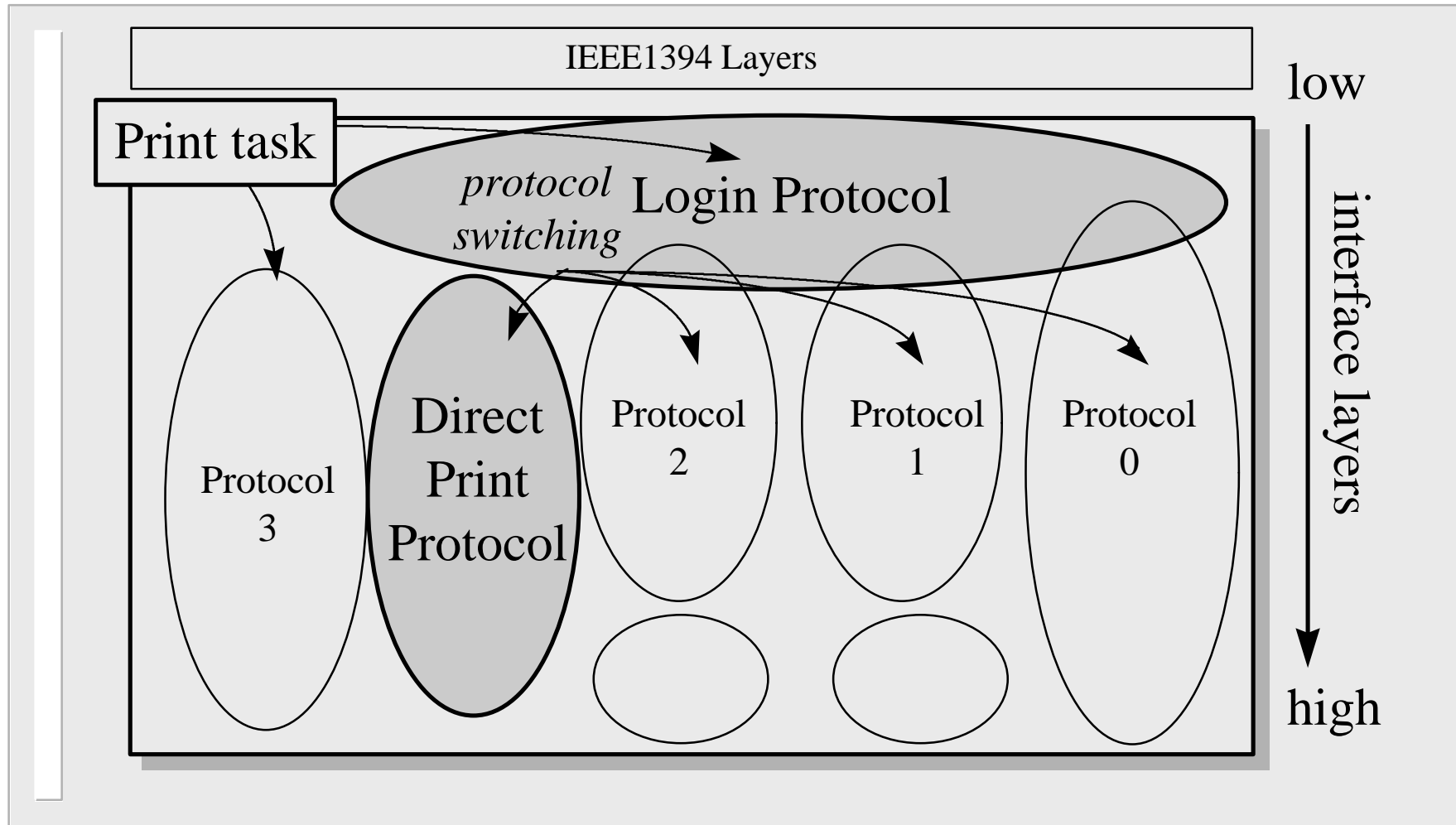
- Will follow the **Login Protocol + Direct-Print Protocol** that will be defined in the Printer Device Class Spec.
- Both the **printer** and **data-output device** must be **Direct-Print** capable.

– Direct Print Protocol(DPP)

- Printer Control Functions / Method defined
- Print data format defined

Areas Covered

○ : protocols defined



Categorizing Printers

■ Categorize Printers by Printing Capability.

– Group A

■ Login-Capable/Non Direct-Print Capable Printers

- ex. PC based printers (w/o Direct-Print)

– Group B

■ Login-Capable/Direct-Print Capable Printers

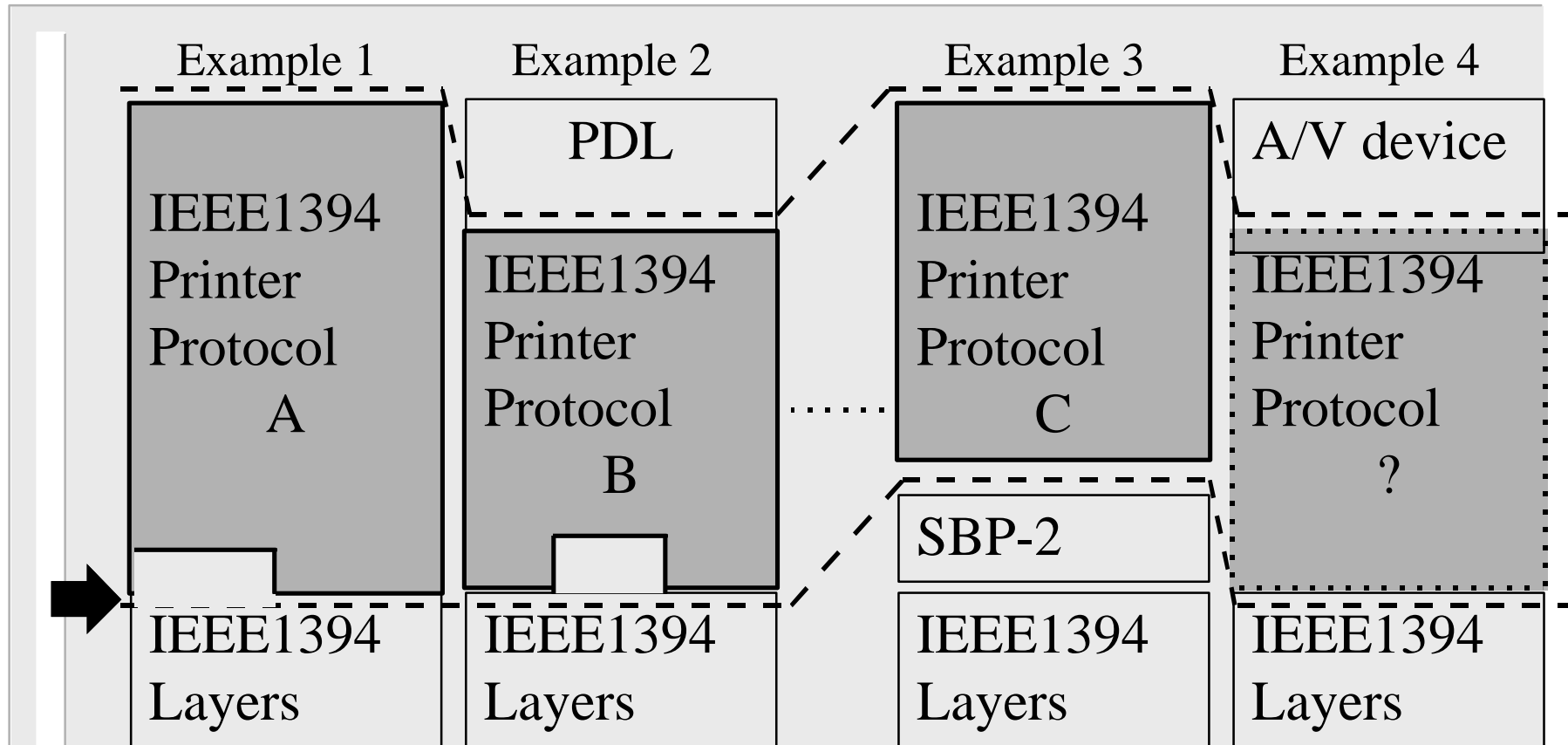
- ex. Future “Direct-Print” compliant inkjet printers,
PC based printers **with** Direct-Print

– Group C

■ Non Login-Capable Printers

- ex. class non-compliant video printers

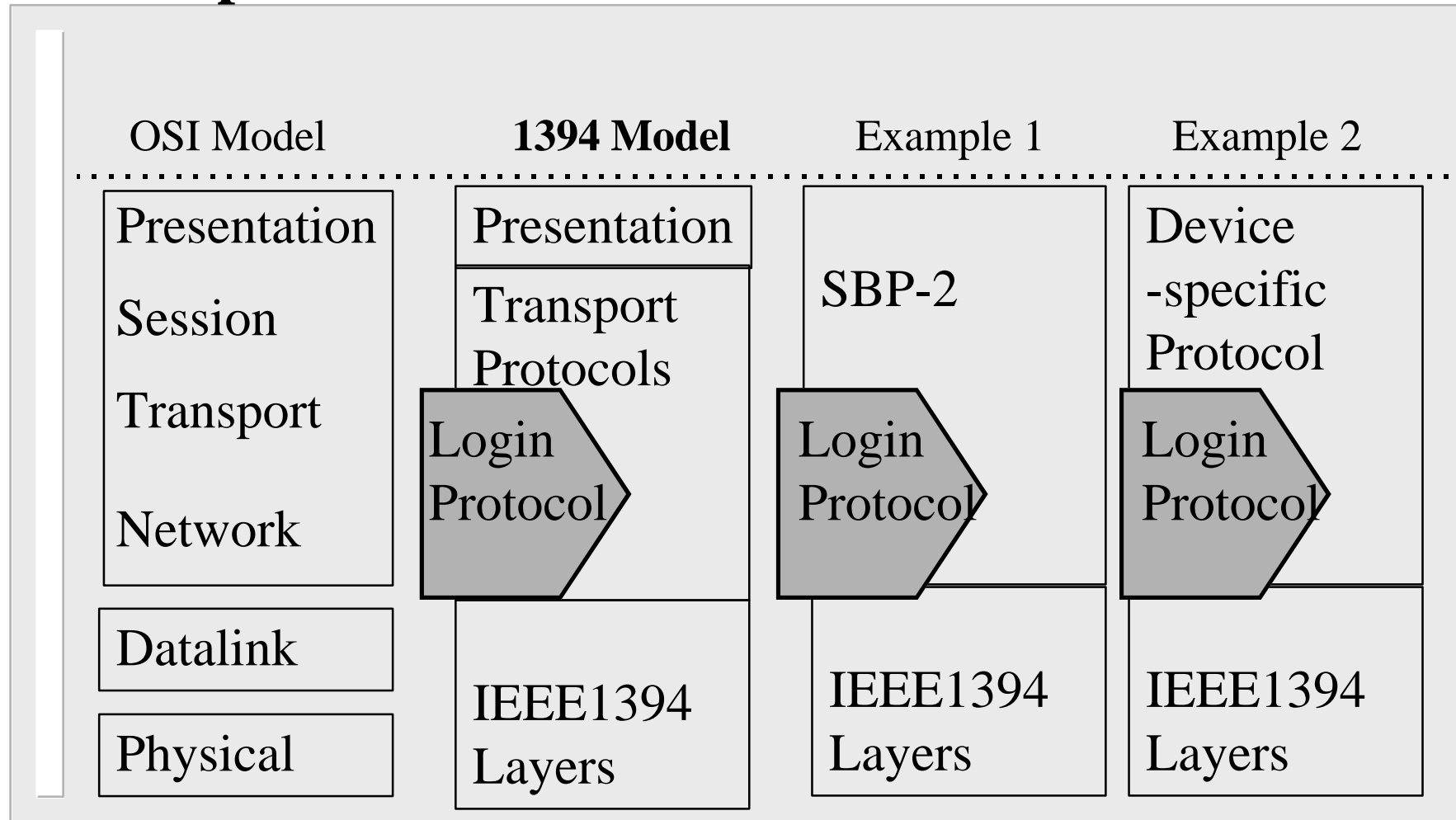
The Current Situation....



A Common I/F that will suite everyone is NOT defined!

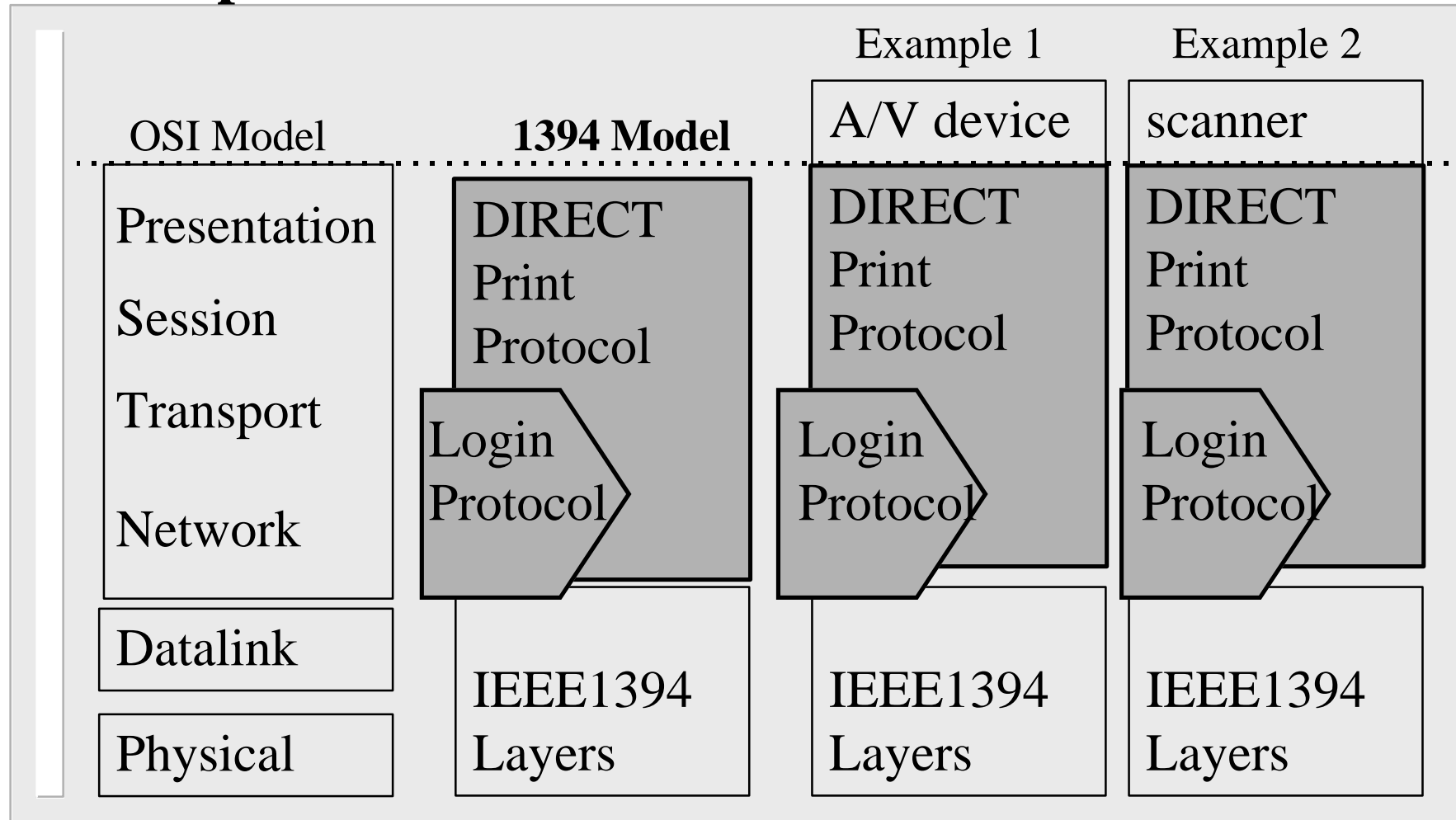
The Scope of the Protocol-1

Group A Printers



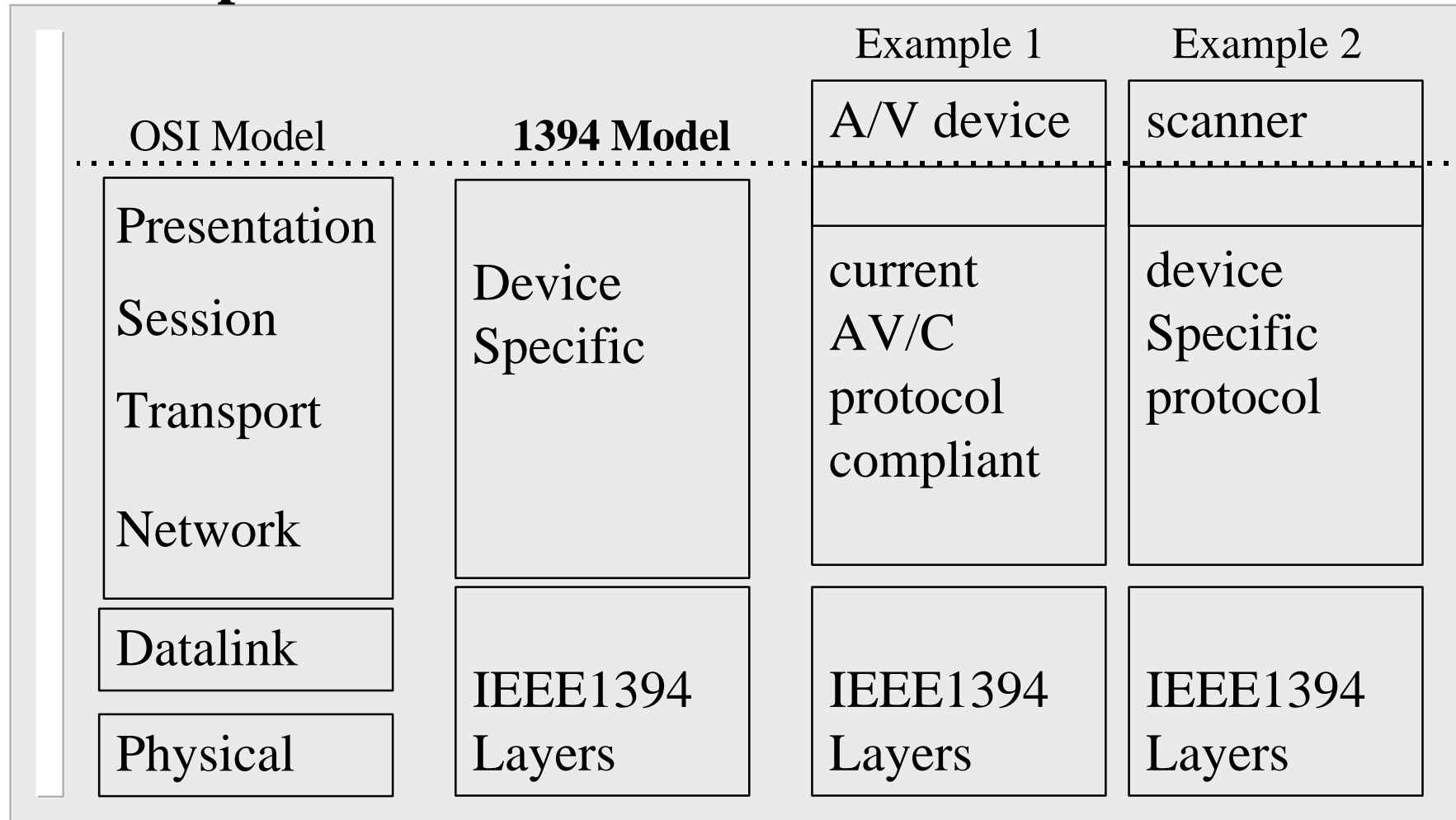
The Scope of the Protocol-2

Group B Printers



The Scope of the Protocol-3

Group C Printers



Group Requirements

	Login Protocol	Direct Print Protocol	Plug and Play***
Group A	mandatory	no implement	mandatory	
Group B	mandatory	mandatory	optional	
Group C	no implement	no implement	no implement	

*TBD:Study will be needed for Plug and play capabilities.

**.....There may be other items of discussion in the future.

Login Protocol Requests

– Candidates...TBD

- LOCK
- GET_STATUS
 - inquiry on current printer status.
- GET_CAPABILITIES
 - inquiry on printer capability (group, protocols)
- SET_PROTOCOL(*optional*)
 - enables 1 protocol (in case of multi-protocol support)
- SOFT_RESET

Direct-Print Protocol

– Candidates...TBD

The DPP protocol will explain

■ Data Transfer mode

- Asynchronous / Isochronous (optional)

■ Data Format

- YUV , RGB, JPEG

■ Printer control requests

- print start, print stop,

Summary

The Printer device class will define a:

- **Login Protocol** *for*
 - a common connection/multi-protocol support
- **Direct -Print Protocol** *for*
 - a common printing protocol
- *The protocol will support schemes;*
 - PC based printing
 - Direct-Printing
 -and more.

Contact

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(scheduled to be available at this site.)

Thank You for your interest!