

Standards for Multi-Protocol Air Interface

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The Rise of Multi-protocol Interfaces

Caused by:

Backward compatibility

Competition

Regional convergence

Made possible by:

DSP

Low cost changeable memory

Software defined radio

Multi-protocol identification and negotiation

Identify protocol by unique
attributes

Define common protocol for
identification and negotiation

Etiquette -

a protocol used only for
identification and negotiation

History of etiquettes in wireline modems

Modems without etiquettes

Bell 103, 202, 212

ITU V.21, V.23, V.22, V.22bis, V.32, V.32bis

Modems and transceivers with etiquettes

ITU V.34, V.90, V.91, V.92,

DSL transceivers use G.994.1

Reasons for Etiquettes

- ◆ Picking a physical layer technology is a pointer to a layered stack of protocols
- ◆ Verification of compatible operation of multi-layer protocol is problematic
- ◆ Full compatibility between multiple implementations of protocol is not practical
- ◆ Ability to negotiate super-set features
e.g., encryption, higher data rate
- ◆ Fall back selection

Requirements for Etiquette

- ◆ End-to-end operation
- ◆ Negotiate services only
- ◆ Single tree unambiguous structure
- ◆ Receiver ignores what it does not understand
- ◆ Priority defined
- ◆ Extensible proprietary functionality
- ◆ Etiquette revision level

In Summary

Multi-protocol systems

Disadvantage - multi cost systems

Advantage - more adaptive to future requirements