Lesson 3

Principles of the Data Link Layer

Knowledge is structured in consciousness.

Main Points

1. Data link layer provides a framing service to the network layer to encapsulate **packets** (from network layer) into **frames** for transmission, and on the receiving end, to convert frames into packets. Framing errors are managed with techniques such as character counting and bit stuffing.

2. Data link layer manages transmission errors, regulates data flow, and provides services such as acknowledged or unacknowledged connectionless service, or acknowledged connection-oriented service.

3. Error-detection and error-correction schemes like Hamming codes and CRC add redundant information to the frames to aid the receiver in verifying correct transmission. To verify the truth of knowledge, it should be verifiable on the level of its own logical structure, verifiable from ancient records, verifiable from modern science, and verifiable from ones own experience.

4. Data link protocols use positive and negative acknowledgements to increase transmission reliability, but try to minimize their use to maximize efficiency. Nature dynamically balances opposing tendencies to further progress in living systems. Opposites coexist in the unified field.

Connecting the Parts of Knowledge with the Wholeness of Knowledge

1. Creative intelligence is adaptive. Packets are transformed into frames for their transport on the communications link.

2. Creative intelligence is integrative. Sliding window protocols integrate error control and flow control into one protocol.

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3. Transcendental consciousness is a field beyond space and time where no obstacles exist.

4. Wholeness moving within itself: In Unity Consciousness, thought and actions have the quality of frictionless flow of bliss consciousness.