



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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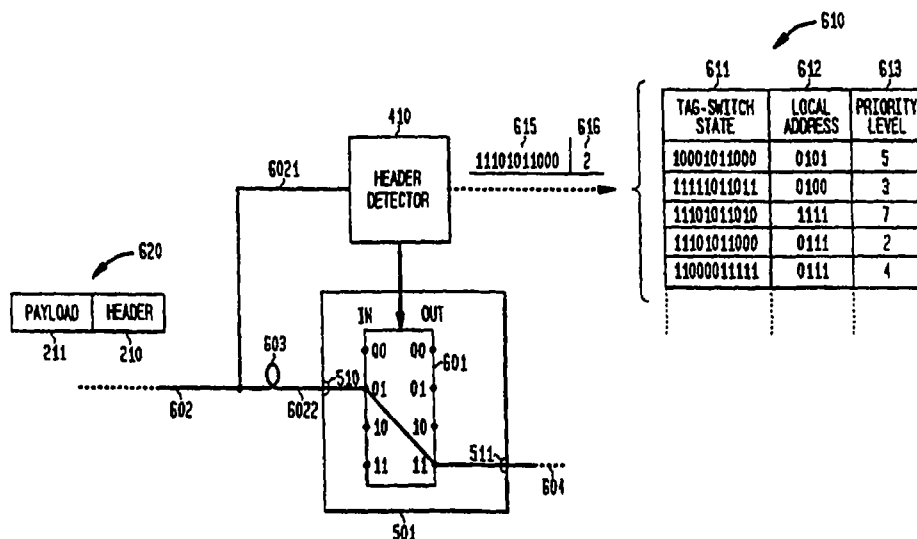


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(54) Title: HIGH-THROUGHPUT, LOW-LATENCY NEXT GENERATION INTERNET NETWORKS USING OPTICAL TAG SWITCHING



## (57) Abstract

An optical signaling header (210) technique applicable to optical networks wherein packet (620) routing information is embedded in the same channel or wavelength as the data payload (211) so that both the header (210) and data (211) payload propagate through network elements with the same path and the associated delays. The header (210) information has sufficiently different characteristics from the data payload (211) so that the signaling header can be detected without being affected by the data payload, and that the signaling header can also be removed without affecting the data payload. The signal routing technique can overlaid onto the conventional network elements in a modular manner using two types of applique modules. The first type effects header encoding and decoding at the entry and exit points of the data payload into and out of the network; the second type effects header detection at each of the network elements.