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## (12) United States Patent

### Yancey et al.

#### (54) RECONFIGURABLE COMMUNICATIONS INFRASTRUCTURE FOR ASIC NETWORKS

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#### (57) ABSTRACT

Reconfigurable communications infrastructures may be implemented to interconnect ASIC devices (e.g., FPGAs) and other computing and input/output devices using high bandwidth interconnection mediums. The computing and input/ output devices may be positioned in locations that are physically segregated from each other, and/or may be provided to project a reconfigurable network across a wide area. The reconfigurable communications infrastructures may be implemented to allow such computing and input/output devices to be used in different arrangements and applications, e.g., for use in any application where a large array of ASIC devices may be usefully employed such as supercomputing, etc.

#### 34 Claims, 18 Drawing Sheets



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