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- (71) **Applicant (for all designated States except US):** **IWICS INC** [US/US]; 19125 North Creek Parkway, Suite 201, Bothell, WA 98011 (US).

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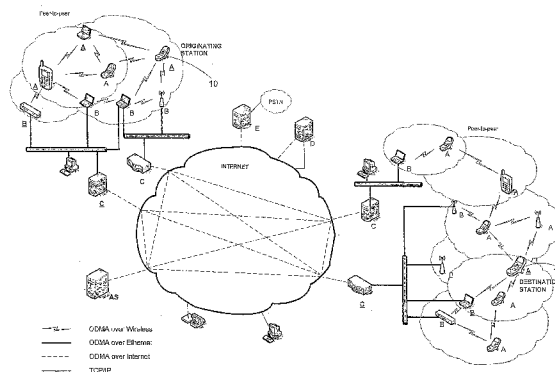
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- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** **LARSEN, James, David** [ZA/US]; 22111 55th Avenue SE, Woodinville, Washington 98072-8370 (US).
- (74) **Agents:** **SPOOR & FISHER** et al.; P O Box 454, 0001 Pretoria (ZA).
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(54) **Title:** MULTI-MEDIUM WIDE AREA COMMUNICATION NETWORK



(57) **Abstract:** A method and system for operating a communication network are disclosed. The communication network comprises a primary network, typically a wireless network, and an auxiliary network, typically a wired packet switched network such as the Internet. The primary network includes wireless stations each able to transmit and receive data over the primary network, and bridge stations able to transmit and receive data both over the primary network and over the auxiliary network. The auxiliary network includes auxiliary stations and bridge stations each able to transmit and receive data over the auxiliary network. At each bridge station, the activity of other stations on both the primary network and the auxiliary network is monitored to establish the availability of intermediate stations for onward transmission of message data from an originating station to a destination station. Probe signals, addressed to at least one station on the auxiliary network, from said at least one bridge station, while further probe signals are transmitted to stations on the primary network. Stations receiving the probe signals respond by transmitting connectivity data to indicate their availability as intermediate stations. Message data is transmitted from the originating station to the destination station via at least one opportunistically selected intermediate station, including at least one bridge station. The system permits peer-to-peer communication between two wireless stations via the auxiliary network.



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