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Automakers pick MOST as high-speed in-car bus

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PARK RIDGE, Ill. — A consortium of the world's biggest automakers last week said it would endorse the high-speed network fiber-optic bus known as MOST (Media Oriented Systems Transfer) by the first quarter of 2001, and possibly as soon as the end of this year. The Automotive Multimedia Interface Collaboration (AMI-C) made the announcement at a technical conference in Turin, Italy.

Endorsement by the AMI-C consortium is viewed as a critical step, because the group includes BMW, DaimlerChrysler, Fiat, Ford, General Motors, Honda, Mitsubishi, Nissan, PSA Peugeot-Citroen, Renault, Toyota and Volkswagen. However, some AMI-C members expect the group will ultimately endorse a second high-speed bus, possibly IEEE 1394.

"No later than first quarter of next year, we should have a steering committee meeting where we endorse MOST," said Michael Noblett, program manager for AMI-C. "Unless something earth-shattering occurs between now and then, it's going to happen."

Use of a common high-speed bus could help carmakers and their suppliers simplify the process of adding to vehicles a host of multimedia devices such as navigation systems, CD players, video screens, digital radios, cell phones and in-car PCs. Today, vendors often redesign products several times to meet the requirements of each automaker's proprietary data bus network.

Royalty-free and open

Endorsement of MOST is seen as a key step for vehicle manufacturers facing an explosion of automotive electronic products. Use of a standard network would let them add new electronics closer to a vehicle's introduction date. For example, manufacturers are already in the planning stage for vehicles that will be introduced in the 2005 model year and later.

For more than a year, automakers have viewed MOST as a candidate. The system, created by the MOST Cooperation (Karlsruhe, Germany), uses a 25-Mbit/second fiber-optic bus. Partners in the Cooperation include Audi, BMW, DaimlerChrysler, Harman/Becker and Oasis Silicon Systems.

Previously, AMI-C members had said that MOST didn't meet the requirements of the consortium's charter, which calls for technologies to be "open and royalty-free." At the Convergence

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conference in Detroit last month, however, MOST announced that it would eliminate its connection fee of 0.3 Euro per device. The Cooperation's members have also agreed to make all parts of the MOST specification open and available.

"Since they made it open and they made it free, we expect to have no problems with the endorsement," Noble said.

Several automakers have already incorporated MOST technology into upcoming vehicle programs, typically in luxury cars. BMW will use it in a vehicle to be released next year. Audi and DaimlerChrysler have also said they are integrating the MOST bus into production vehicles.

At last week's ITS World Congress in Turin, other carmakers — including Ford, Jaguar and Volkswagen — demonstrated vehicles containing MOST technology. The technology is also expected to be used by a major American vehicle manufacturer in an upcoming program.

Engineers said that automakers are showing a growing interest in the MOST bus because it offers far higher data rates than buses based on controller-area network (CAN) technology, which is commonly used in today's vehicles for such chores as power-train control. IDB-C (Intelligent Transportation Systems Databus-CAN), for example, offers speeds of about 250 kbits/s, about 100 times slower than MOST. As a result, such CAN-based buses are expected to give way to fiber-optic networks in multimedia applications, although they will continue in their roles under the hood.

Up to now, however, many automakers have maintained allegiance to CAN, even for multimedia, in part because of the lower costs of the copper-based bus. MOST members said they expect that to change, as automotive multimedia applications take off.

"The first few production applications will be luxury vehicles," said Henry Muyschondt, general manager for business development at Oasis Silicon Systems AG (Karlsruhe, Germany). "But it will migrate downward through the vehicle lines as volume builds up."

MOST members also expect the bus to move beyond the European market that developed it. Muyschondt noted out that Ford, Toyota and Nissan are members of the MOST Cooperation.

AMI-C members said the endorsement of MOST would not preclude endorsing another high-speed bus. "At one time, we were going to endorse only a single high-speed network, but that's not the plan anymore," said Edward Nelson, a Ford technical specialist and system team leader for AMI-C.

Room for two

Indeed, most AMI-C members expect IDB-1394, a high-speed bus based on the 1394 computer industry standard, to get the consortium's nod, after some aspects of the spec are brought up to "automotive grade."

Automotive engineers say the two data buses don't necessarily compete with each other and that in some cases, vehicles could combine a 1394 access port with a MOST network.

Many engineers like 1394 because it is compatible with camcorders, video players, DVD systems and other consumer gear that might eventually plug into vehicles. Some engineers are hesitant, however, because unlike MOST, 1394 hasn't been fully proven out in rigorous automotive environments.

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