



U.S. Department
of Transportation
**Federal Highway
Administration**

New Mexico Division

April 24, 2018

4001 Office Court Drive
Suite 801
Santa Fe, NM 87507
505-820-2021

In Reply Refer To:
HFO-NM
ENGI 23

Mr. Tom Church
Cabinet Secretary
New Mexico Department of Transportation
PO Box 1149
Santa Fe, NM 87507

Dear Secretary Church:

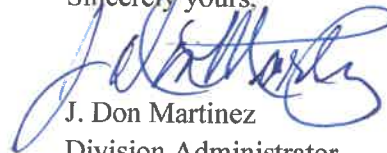
The Federal Highway Administration, New Mexico Division Office has reviewed the New Mexico Department of Transportation's (NMDOT) Certification of Proprietary Products for Dynamic Message Signs (DMS) for use on Federal-aid projects.

The Certification establishes the basis and justification for utilizing proprietary Intelligent Transportation System (ITS) components, DMS manufacturer Adaptive Microsystems, are essential for synchronization with existing facilities and equipment logistics.

In accordance with 23 CFR 635.411 and based on the supporting information provided, FHWA NM Division Office concurs with the request. As established in Guidance on Patented and Proprietary Products a sunset provision must be established to assess changes in market conditions, technologies and re-examine the need for specifying proprietary products. Actions may be approved to extend the sunset as justified accordingly. As such the sunset established for this specific project action is five (5) years from date of this memo.

If you have any further questions, feel free to contact Ms. Marilyn Ochoa (505) 820-2038 or at marilyn.ochoa@dot.gov.

Sincerely yours,



J. Don Martinez
Division Administrator

cc:
Mr. Anthony Lujan, NMDOT
Mr. Armando Armendariz, NMDOT
Ms. Sally Reeves, NMDOT
Ms. Priscilla Benavides, NMDOT
Mr. Luke Smith, NMDOT
Ms. Eunice Cazares, NMDOT
Mr. BJ Gottlieb, City of Rio Rancho



April 10, 2018

Federal Highway Administration (FHWA)
C/O J. Don Martinez – Division Administrator
4001 Office Court, Suite 801
Santa Fe, NM 87507

Subject: Request for Sole Source and Proprietary Certification for Dynamic Message Signs (DMSs)

Dear Mr. Martinez:

The New Mexico Department of Transportation (NMDOT) is requesting approval of a certification for DMSs specific to the sign manufacturer Adaptive Microsystems. The specific products are:

Manufacturer	Model	Use
Adaptive Microsystems	AlphaXpress 9700	Mainline Overhead
Adaptive Microsystems	AlphaXpress 8700	Mainline Roadside
Adaptive Microsystems	AlphaXpress 8600	Arterial Overhead and Roadside; Trailblazer

The certification would allow the NMDOT to specify a patented or proprietary product for NMDOT projects with federal-aid funding. The product will be on National Highway Systems within the State of New Mexico.

In accordance with 23 CFR 635.411, the 2015 Stewardship and Oversight Agreement between the FHWA and the NMDOT and the attached supporting information provided by the ITS Bureau, the NMDOT requests FHWA approve this certification.

Thank you,

Armando M. Armendariz
Division Director Design and Construction

XC: Anthony Lujan, Deputy Secretary
Charles Remkes, ITS Bureau Chief
Frank Lozano, FHWA Operations Engineer
Marilyn Ochoa, FHWA Area Engineer

Susana Martinez
Governor

Tom Church
Cabinet Secretary

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District 6



December 8, 2017

J. Don Martinez, New Mexico Division Administrator
 Federal Highway Administration (FHWA)
 4001 Office Court Drive, Suite 801
 Santa Fe, NM 87507

Subject: Request for the Sole Source Proprietary Certification for Dynamic Message Signs (DMSs) to Maintain Functional Synchronicity

Dear Mr. Martinez:

Per the allowances contained in 23 CFR 635.411, the New Mexico Department of Transportation is submitting a Certification for the subject item specific to the sign manufacturer Adaptive Microsystems®. The need is justified for multiple reasons including functionality, compatibility, training and inventory control, each of which has a direct impact on how we effectively manage our DMS's operation and maintenance.

I, Charles Remkes, Chief of NMDOT's ITS Operations, certify that in accordance with the requirements of 23 CFR 635.411(a)(2), that this patented or proprietary equipment is essential for the synchronization with our existing transportation system management and operations environment which includes the following items:

Manufacturer	Model	Use
Adaptive Microsystems	AlphaXpress 9700	Mainline Overhead
Adaptive Microsystems	AlphaXpress 8700	Mainline Roadside
Adaptive Microsystems	AlphaXpress 8600	Arterial Overhead and Roadside; Trailblazer

Certification Documentation:

Functionality: The NMDOT uses DMSs to create messages that convey road and traffic conditions to motorists who are in route to their destination. The messages' alphanumeric are constructed from energizing adjacent pixels. Pixels are comprised of a tight group of light emitting diodes (LEDs) that, depending upon the sign manufacturer, can vary between six to eight LEDs per pixel. Adaptive Microsystems® is currently the only manufacturer of DMSs utilizing zener diodes. Zener diodes allow each LED to operate independent of other LEDs within the same pixel. If a zener LED loses functionality, it will not affect any other zener LED in the pixel. However, when a conventional LED malfunctions in a pixel, it will remove either half or all of the remaining LEDs in that pixel from service. This carries the potential of having a larger impact (incomplete character constructs) in the display message. Having zener diodes lessens that impact, which in turn allows us more time between associated

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DMS maintenance and repair activities. Reducing the frequency of maintenance and repair events that require traffic control with elements such as lane closures will assist in mitigating related congestion thereby improving roadway safety.

Compatibility: The specified sole source items by Adaptive Microsystems are needed to consolidate our signs while connecting to and operating with our existing ITS devices and applications. Having the same models (and same pixel arrays) of DMSs for each type of mount is required for the grouping of our signs in our message management application. This is needed so that the creation of a message and posting it to each DMS can be done with a single command. Because models from different manufacturers run the risk of having different pixel arrays, message errors would occur when sending the same message to different model signs. Typical errors of this type are associated with a character count per line or a pixel count per character. To mitigate these type of errors, the application administrator must create a separate sign configuration template. Additionally, the application operator must send a different message command to each different type of sign. From an IT perspective, this adds complications when investigating system errors and from an operational perspective impedes efficiency in message constructs, postings and deletions. Having the same type of sign for each mounting configuration will alleviate these issues.

Training: Technology changes at a rapid pace and the advances within ITS are no exception. Our technical staff is currently comprised of two ITS field technicians and two ITS-IT applications administrators. They not only have to maintain legacy technology, they also have to keep abreast upgrades in new models that often include both hardware and firmware improvements. These migrations are built from the platforms of the existing systems and our technical staff uses their underlying knowledge of those systems as a basis to learn and familiarize themselves with associated developments. Adding disparate systems to our operations would burden our staffs' training requirements for not only our current level of operations but also for what we expect in years ahead.

Inventory Control: Having a single provider of DMSs in turn means having a single supplier of parts. This ensures equipment integration and greatly simplifies or maintenance and repair operations by essentially eliminating the potential of bringing incorrect replacement parts when performing maintenance and repair service. It also greatly reduces the costs associated with keeping our inventory stocked by not having to maintain a shelved inventory of parts that for a secondary line of goods.

In summary, because no other DMS manufacturer provides this fore-mentioned level of functionality, and using other DMS manufacturer product lines will inhibit full system compatibility, as well as incur an excess burden on staff resources with regards to training, DMS maintenance and inventory management and control, we respectfully request a PIF to support specifying Adaptive Microsystem DMSs on federally-funded projects when DMSs are included in the project scope.

We are requesting that this certification to be extended for statewide use for a period of five (5) years.

Respectfully,



Charles Remkes, P.E., Chief
NMDOT ITS Operations