



**2008 European Automotive Chassis Product of the Year Award
Award Recipient – NIRA Dynamics AB**



“We Accelerate Growth”

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Award Description

The Frost & Sullivan Award for Product of the Year is presented each year to the company that has demonstrated excellence in new product development and launch within its industry. The recipient company has shown innovation by launching a broad line of emerging products and technologies.

Research Methodology

To choose the recipient of this Award, the analyst team tracks all new product launches, R&D spending, products in development, and new product features and modifications. This is accomplished through interviews with market participants, and extensive secondary and technology research. All new product launches and new products in development in each company are compared and evaluated based on degree of innovation and customer satisfaction. Frost & Sullivan then presents the Award to the company ranked number one in overall product success.

Measurement Criteria

In addition to the methodology described below, there are specific criteria used to determine final competitor rankings in this industry. The recipient of this Award has excelled based on one or more of the following criteria:

- Significance of new product(s) in its industry
- Competitive advantage of new product(s) in its industry
- Product innovation in terms of unique or revolutionary technology
- Product acceptance in the marketplace
- New product value-added services provided to customers
- Number of competitors with similar product(s)



The “2008 European Automotive Chassis Product of the Year Award,” is presented to NIRA Dynamics AB (NIRA) for its tire pressure indicator (TPI). TPI works as an indirect tire pressure monitoring system in vehicles. NIRA has relentlessly pursued signal processing technology and innovation, which have been bred into the company’s culture since its founding in 2001. This resulted in the company being recognised by vehicle manufacturers as an ideal partner for working on challenging research and development projects.

NIRA launched TPI in the Audi TT model in October 2006, and in the new Audi A4 and A5 in 2007. The company plans to extend its specialisation in indirect tire pressure monitoring systems to other Audi models as well, and expand its market with other vehicle manufacturers in Europe in 2008.

Significance of TPI in the Automotive Industry

One of the primary reasons for passenger car break downs is the under-inflation or slow leakage of air pressure in cars. Often, this often leads to increase in tire wear and crashes due to tire blowouts. TPI from NIRA is a perfect solution, and is the only indirect tire pressure monitoring system in the market. In this system, the driver is alerted for any under-inflation in the tires, even before they break down. This increases safety, reduces tire wear and decreases the fuel consumption of the vehicle.

Unlike conventional direct tire pressure monitoring systems, TPI does not measure tire pressure with wheel-mounted pressure sensors or RF components. The system has an inbuilt signal processing set up linked with other systems in the vehicle, like a brake system, and uses the difference in pressure-related parameters to detect under-inflation.

Competitive Advantage of TPI in the Automotive Industry

There are several benefits of NIRA’s TPI system, when compared to those offered by direct tire pressure monitoring systems. The latter involves issues related to warranty costs and logistics and production issues in the aftermarket, such as spare parts and so on. In contrast, the TPI solution is simple, robust and cost-effective.

Competitors have made similar product developments in the past, but the major disadvantage was having wheel electronics inside the tire. NIRA overcame this by using its expertise in signal processing. Using signals to determine the pressure difference in tires, the driver can be alerted for a pressure drop of up to 25 per cent in one, two, three or all the four tires simultaneously. This will help the driver to identify which tire or set of tires is under-inflated. The only intervention on the part of the driver would be to reset the system when the tire or the tire pressure has been changed.

Increasing Interest among German OEMs

NIRA took the first step by introducing TPI in Audi vehicles. As a part of its agreement with Audi, NIRA plans to introduce indirect tire pressure monitoring systems in all Audi models except the R8, in 2008. German

manufacturers have shown keen interest in TPI, and are most likely to follow Audi in adopting indirect tire pressure monitoring systems. There is also strong interest among European manufacturers, which manufacture cars in Europe and sell the same in the United States. There is a growing interest in the automotive industry for low-cost solutions, and TPI integrated into the vehicle communication network would be the ideal choice for OEMs working on such solutions.

Another significant advantage for OEMs is the possibility of sensor fusion in vehicles fitted with TPI. The pressure and temperature sensors used in TPI can be integrated with other sensors in the vehicle, such as wheel speed sensors, air-bags, accelerometers and cruise control systems. This will help OEMs to detect and isolate any redundant sensors in the vehicle.

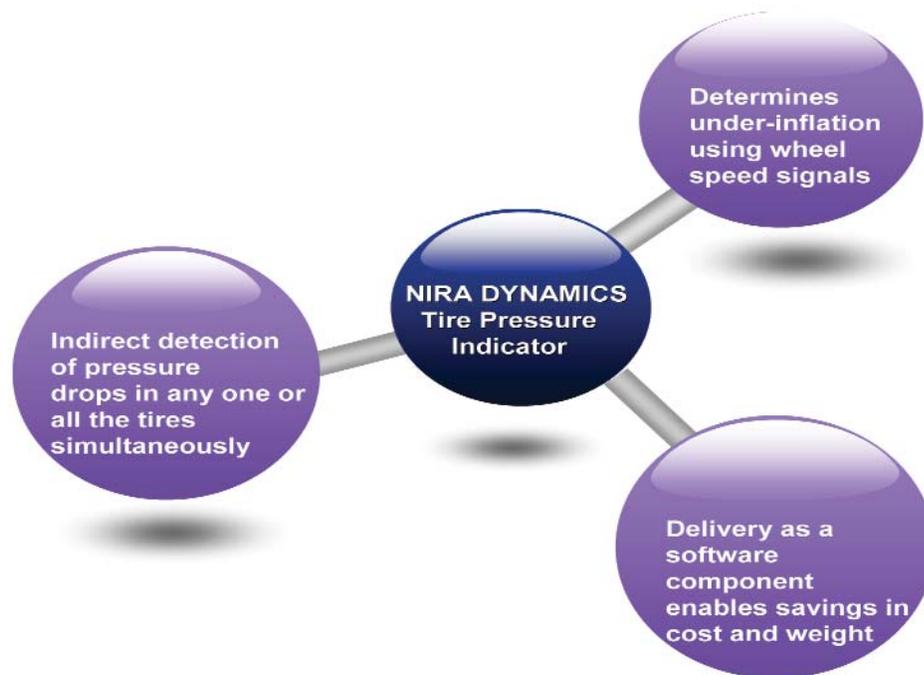


Chart 1.1 Benefits of Tire Pressure Indicator System (TPI)

Source-Frost & Sullivan

Servicing and Replacing Tires will no longer be Major Issues for Customers

At present, people in Europe tend to use custom-made features such as different alloy wheels in their vehicles. Dealers also tend to offer this as a package to customers. However, by using TPI, the customer can be assured that the car is certified and safe for use. Moreover, there is no need for the driver to worry about replacing tires, as TPI automatically adjusts to all types of tires in the market; for example, summer tires, studded winter tires, run-flat tires and so on. Changes in road surface, load variations and driving styles will not affect TPI, as the system is very robust. Being a software-based system that does not rely on any wheel-mounted and battery-powered pressure sensors, TPI has no service or replacement issues associated with its functioning.

Competing Products in the Market - First and Only System of its Kind

In the past, competitors have developed similar basic indirect tire pressure monitoring systems, which relied on rolling radius and circumference of wheel to detect under-inflation. However, as a result of the high investments

involved and the lack of signal processing competence, these systems were not a match to NIRA's TPI system. Direct tire pressure monitoring systems may have volumes, but TPI has all the advantages to compete with them. Additionally, TPI is around 50 per cent lower in price than systems supplied by its competitors. Unlike in direct tire pressure monitoring systems, OEMs need not consider warranty and service cost for TPI. At present, NIRA is working on new product strategies that involve the inclusion of friction, road texture and increasing memory space of the TPI software.

Conclusion

Tire pressure monitoring systems are expected to experience increasing demand in the European market. TPI will be a standard feature in all Audi models in 2008. With the introduction of TPI, the market is expected to witness an increase in the development of tire pressure monitoring systems as a competition to TPI. NIRA has launched a unique technology that provides benefits to vehicle manufactures and end users, and is therefore the deserving recipient of the "2008 European Automotive Chassis Product of the Year Award."

About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.



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