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Technology Innovation Award: Trig Medical Limited, Israel

## Frost & Sullivan's 2006 European Technology Innovation Of The Year Award

F R O S T  S U L L I V A N

### Award Description

Frost & Sullivan's Technology Innovation Award is bestowed upon a company (or individual) that has carried out new research, which has resulted in innovation(s) that have or are expected to bring significant contributions to the industry in terms of adoption, change, and competitive posture. This award recognizes the quality and depth of a company's research and development program as well as the vision and risk-taking that enabled it to undertake such an endeavor.

### Research Methodology

To choose the award recipient, Frost & Sullivan's analyst team tracks innovation in key hi-tech markets. The selection process includes primary participant interviews and extensive primary and secondary research via the bottom-up approach. The analyst team shortlists candidates on the basis of a set of qualitative and quantitative measurements. The analysts also consider the pace of research and technology innovation, and the significance or potential relevance of the innovation to the overall industry. The ultimate award recipient is chosen after a thorough evaluation of this research.

### Measurement Criteria

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

- Significance of the innovation(s) in the industry, and across industries (if applicable)
- Potential of the products of innovation(s) to become industry standard(s)
- Competitive advantage of innovation vis-à-vis other related innovations
- Impact (or potential impact) of innovation(s) on company or industry mind share and/or company bottom line
- Breadth of intellectual property related to the innovation(s), that is, patents, scientific publications, papers in peer-reviewed journals.

## Award Recipient–Trig Medical Ltd., Israel

Frost & Sullivan's 2006 European Technology Innovation of the Year Award in the field of labour monitoring technologies is conferred upon Trig Medical Ltd. of Israel in recognition of the company's development of an advanced, innovative labor monitoring system called LaborPro. Trig Medical's LaborPro technology is significant in that it is able to provide accurate, objective, and noninvasive determination of fetal head station and position. This integrated imaging and monitoring device utilizes image processing technologies to incorporate standard ultrasound images into a 3D display. All this translates into a simpler, easy to use procedure that benefits the delivering mother, the unborn baby, and the obstetrician.

Normally, during the progress of labor, information on fetal head station and position, as well as cervical dilatation, is assessed intermittently by manual vaginal exams performed by the physician and midwife. These labor parameters and most importantly, ruling out the possibility of a cephalopelvic disproportion (CPD) through an early detection, are vital for the labor decision-making process. These manual examinations have high inter and intra-observer variability and a high error rate. As an example, recent studies have shown an error in defining the fetal head position by more than 45 degrees in 60% of the cases. Inaccurate vaginal exams may lead to unwanted outcomes such as fetal/maternal trauma due to the improper use of obstetrical forceps and vacuum extractors in a nonprogressing labor, and unnecessary C-sections that result in bloated medical costs.

It is in the context of such needs that the LaborPro technology is important. It allows easier determination of fetal head station and position during labor. To achieve this, the system employs a combination of an off-the-shelf ultrasound, a personal computer (PC)-based controller, and magnetic position sensors to track fetal position and station. Using the position sensors and proprietary algorithms, the maternal pelvis is mapped, and the spatial position of the pelvic inlet is determined. An abdominal ultrasound transducer is calibrated with the positioning system, and the fetal head position and station are assessed by marking the bi-parietal diameter and front occipital diameter, or by marking the scalp tip or other known fetal head landmarks such as eyes or nose bridge, in relation to the pelvic inlet.

The LaborPro is staff and mother-friendly and requires only basic training in ultrasound usage. There is no need for an obstetric ultrasound expert. Further the technology employs non-invasive, radiation-free pelvimetry, as well as a single-step computerized digital examination. All labor progress tracking data including the fetal heart rate monitor are automatically recorded by the system, which helps to reduce staff workload. LaborPro has already gained the European CE Mark and clinical studies for US FDA clearance are ongoing. To boost commercialization prospects, Trig Medical has established collaboration with several opinion leaders in the field of obstetrics.

In conclusion, the Frost & Sullivan Award for Technology Innovation recognizes Trig Medical's development of the LaborPro – an integrated ultrasound and fetal monitoring technology- that will help plug the unmet/under-met needs of end users with respect to information on fetal head station and position in relation to pelvic inlet. This technology provides critical information on the progress of labor by providing objective and accurate data employing non-invasive ultrasound technology; this would help physicians make better decisions, which in turn could increase the safety and comfort of mother and baby and improve outcomes.