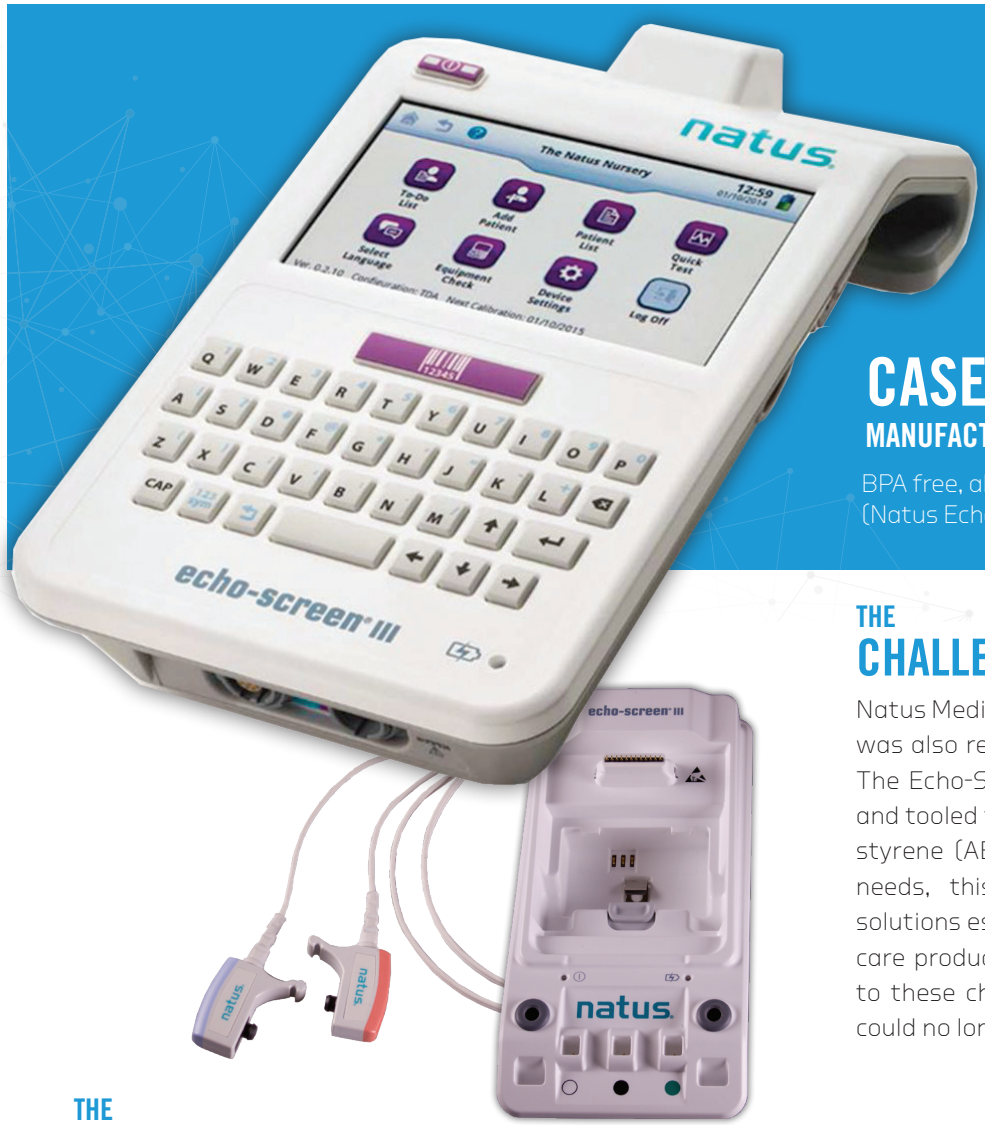

MEDBIO

CASE STUDY:

MANUFACTURING WITH SPECIALIZED MATERIAL

BPA free, all-in-one infant hearing screener
(Natus Echo-Screen III®) manufacturing case study

THE CHALLENGE

Natus Medical set out to create a flame retardant device which was also resistant to aggressive cleansers and disinfectants. The Echo-Screen III hearing screener was originally designed and tooled to use a polycarbonate (PC)/acrylonitrile butadiene styrene (ABS) alloy. To answer recently emerging customer needs, this global leader in newborn hearing screening solutions established new material requirements for its infant care products which eliminated all bisphenol A or "BPA". Due to these changes in specifications, the Echo-Screen product could no longer be manufactured in PC/ABS.

THE SOLUTION

With the molds already completed and successfully sampled for production, a new resin had to be found with similar mechanical and cosmetic characteristics. Additionally, in order to meet product launch deadlines, building and qualifying new molds was out of the question. The new resin had to have similar shrink rates to PC/ABS.

MedBio worked with Natus Medical engineers and numerous resin manufacturers to find a resin meeting the stringent requirements of the device. Eventually, MedBio and Natus were able to settle on Tritan™ copolyester MXF121, an experimental resin from Eastman which had not yet been released to the market.

Using Scientific Injection Molding or "SIM" principles, and working directly with Eastman, MedBio was able to quickly modify existing processes to insure the existing tooling would produce a capable part every shot.

MEDBIO'S ROLE

MedBio was the principal in tooling and molding the Echo-Screen III®.

SUCCESS

MedBio quickly identified hurdles and made adjustments in order to fulfill the tool requirements. The experience and expertise on the team allowed for the successful manufacturing of the product out of Eastman Tritan™ copolyester MXF121. The result was historical... the first ever 100% BPA free medical device on the market.

PROJECT STATISTICS

Molded Components	21
Two-Shot Components	2
Printed Areas	14
Sub-Assemblies	5

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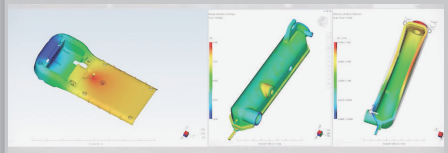
DESIGN TO PRODUCTION, SIMPLIFIED.

Prototype-Plus™ is a low cost tooling solution that provides customers with the speed and cost of a prototype tool, at the quality level required for production.

PROTOTYPE Plus™

1 Design for Manufacturability



AIM's mold designers review part details to ascertain tool complexity, cycle time, and possible cosmetic and physical issues in the part. Recommendations are made to reduce cost and increase process stability and consistency of the final product.

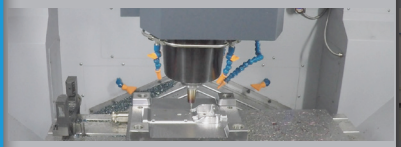
2 Tool Design

All tool designs are done in 3D CAD. Once completed, AIM will first conduct an on-line meeting with the customer to review the tool design ensuring all critical criteria is addressed.

TYPICAL DURATION
2-5 days

CONCURRENT

3 Tool Construction



AIM employs a large state-of-the-art toolroom to utilize the Prototype Plus™ process.

TYPICAL DURATION
1 - 4 weeks

4 Injection Molding SIM & FAI

Process development starts with Scientific Injection Molding. This ensures long term capability of the molding process, followed by a 100% FAI... confirming part to print.

TYPICAL DURATION
1 - 2 weeks

TOOLING CHANGE

5 Quality Validation

With our highly trained staff and well equipped lab, AIM Plastics is prepared to handle any level of validation that is required!

TYPICAL DURATION
Job Specific

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