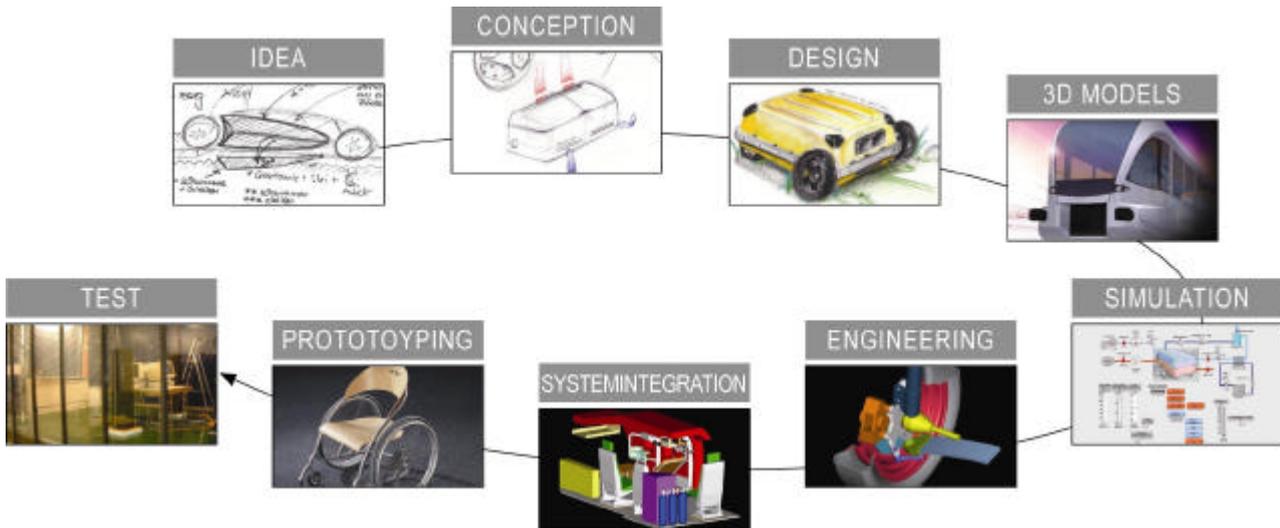


## PRODUCT DEVELOPMENT

From the initial idea through to the product ready for series production - ESORO supplies the entire scope of services or partial aspects of it.

Complex problems are considered integrally and implemented in solution concepts. In this process, design, simulation and engineering come into being as the result of constant, mutual interaction, thus leading to efficient and customer-orientated elaboration and assessment of the concepts.

The solutions elaborated are "hardwareized" in our workshop - the possibilities extend from the simple function specimen through to the high-quality prototype, almost ready for series production.



### IDEA

Your idea can be the starting point of our work - or the result of a discussion of your needs with our team.

### CONCEPTION

The concept largely determines the functionality, the acceptance and, thus, also the success of a product. Suitable tools, experience and a lived innovation culture help us to work out the right decisions.

### DESIGN

Design is not only styling but an integral part of the conception process.

### 3D MODELS

Virtual mock-up enables an efficient development, allows an early visualization and simplifies the production of the product.

### SIMULATION

Where complex and dynamic systems can't be described anymore by simple assumption, multidimensional  $\sigma$  real-time simulation helps to understand analyze and optimize.

### ENGINEERING

Engineering means to find an optimal solution in constant interaction between design, construction, calculation and production - and of course your input as customer.

### SYSTEM INTEGRATION

With rising complexity of today's products, the efficient integration of all functions in the product and of the product itself in its environment is a major task in every product development.

### PROTOTYPING

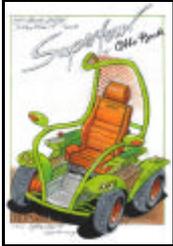
Some times, simulation is not enough. Therefore ESORO can offer a experienced and well-equipped workshop to produce simple function specimens as well as high-quality and fully-functional demonstration prototypes.

### TEST

Prototypes are usually as close to the end product, that all kind of testing - sometimes up to the approval - can be done. For structural and thermal tests, ESORO operates a well equipped testing facility.

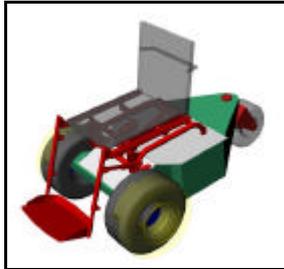
## SUPERFOUR – CAN'T FLY, 2006

The SuperFour is the first outdoor wheelchair featuring all-wheel-drive and all-wheel-steering. Otto Bock GmbH succeeded to redefine the autonomy and individual freedom for people with limited mobility. The SuperFour features four-wheel-drive powered by hybrid technology which enables an enormous climbing ability and nearly unlimited range. All-wheel-steering, a navigation system, single-wheel suspension, automatic seat-tilt and seat-position adjustment, halogen lights and weather protection help to improve the comfort of wheel-chair users. Urs Schönauer, the designer of the SuperFour, managed to integrate all these features in an elegant appearance. ESORO was responsible for the development and manufacturing of this fully functional concept chair and realized the SuperFour in only 3 months. The SuperFour was presented to public during the Paralympics and the Reha Care 2004 in Düsseldorf. Due to the very positive public response, the SuperFour was developed ready for serial production by ESORO and is now produced and market by Otto Bock GmbH.



## PARAGOLFER, 2005

The Paragolfer is an all-terrain wheelchair that enables people to stand upright. This makes it possible for them to play golf and to communicate on eye height. The strong drive-train and the good traction offers a lot more mobility for people dependent on wheelchairs, additionally, standing-up fulfills also therapeutic functions. The Paragolfer was developed to series production readiness by ESORO together with Otto Bock GmbH according to a concept of Anthony Netto und Christian Nachtwey for Parabasetec.



## POWER-PLATE NEXT GENERATION, 2003

ESORO developed the most recent version of the Power-Plate which is used for treatment of muscular diseases and more and more in public gym's for conventional fitness training. The scope of the order included a complete redesign, integration of new functions, production of a design mock-up, production of an operable prototype and paving the way for series production.



## SUPERTRANS 2000, 2000

The Supertrans 2000, as a "Concept Chair" demonstrates the future of luxurious electric wheelchairs. It was developed from design sketches through to the operable prototype for the Otto Bock Orthopädische Industrie GmbH. Particular attention was paid to the situation of restricted mobility. The design process thus focussed on optimum accessibility, accessible operating controls within arm's reach and practical storage options for personal effects. The innovative "wings" - a novel design of the armrests - contain components which are still not yet the norm for wheelchairs today. A bright halogen lighting system, a Windows CE minicomputer with integrated mobile phone, Internet access and hands-free facility, storage compartments for keys, a hi-fi system with CD changer, a GPS system, a chilled drinks holder and an IR remote control for controlling doors, lifts and TV sets. The "rucksack" can be folded out to provide an additional seating area.

