

Jarosław Nowiński

TAPS - the constant search for passenger seats new solutions

For almost 30 years TAPS has constantly been looking for new solutions and implementing them in the field of traveling by public transport. Since the company's inception, its primary goals has been to develop a wide variety of passenger seats. They are all characterized by high comfort and ergonomics which are beyond that of basic passenger seats whose standards are specified in the UIC norms.

For many years TAPS has been cooperating with specialists, universities and research and development institutes specializing in the field of seat ergonomics. Starting its business activity on the railway market with other companies (some of which possessing over a hundred years of experience of producing seats), TAPS has decided to build its own know-how, selecting partners with an impressive scientific knowledge and experience.

At present, the company consists of 120 employees, among which are people who have been constituting its core for many years. TAPS is constantly developing its research department. The company can proudly present 10 inventions, 11 patent applications and certificates of EU patterns as well as trademarks.

Constant self-development

When starting the development of a seat, one has to possess knowledge in several different fields and have the right tools used for analysis and verification of the established solutions. Since its beginning, TAPS has created and has been developing its Research and Development department, along with its own complex scientific research background enabling complex testing of comfort and ergonomics.

In its laboratories, TAPS is conducting durability, fatigue and dynamic tests for its seats, its elements and its specific upholstery layouts.

Along with its R&D, the company has also been developing other departments, creating an entire supply base enabling design and production of seats from scratch for various means of transport



TAPS laboratory

such as the underground, regional trains, long-distance trains and trams. This includes facilities for production of tools, moulds and polyurethane foams.

The last item mentioned is produced using technology in strict accordance with the specifications which meets the flammability requirements specified in the EN 45 545 norm.

TAPS produces foam according to the customer's expectations, project requirements, norms and regulations of hardness, which is one of the key elements setting the standard of comfort for the passenger.

Besides its own development, TAPS has been searching for and implementing solutions characterized by an attractive and unique design, unconventional look and a characteristic image enabling association with the company's other products.

This approach has resulted in a long-lasting cooperation with several designers, especially with Janusz Kaniewski, whose input gave birth to a concept, drawings and sketches of the initial suggestions for the new range of XC seats.

Projects for DB Regio AG

One of the most important steps in the development of TAPS included starting implementing projects for DB Regio AG (since 2006), with a later cooperation in the design department (since 2010). At the beginning of the first project of the seat design update for regional trains started in 2010, new standards for the concept of seats were specified.



Upholstery For Transport
Specialized Works
Maciej Kowalski



DB Produktkatalog

TAPS Passagiersitze sind in DB REGIO AG
Produktkatalog 2014

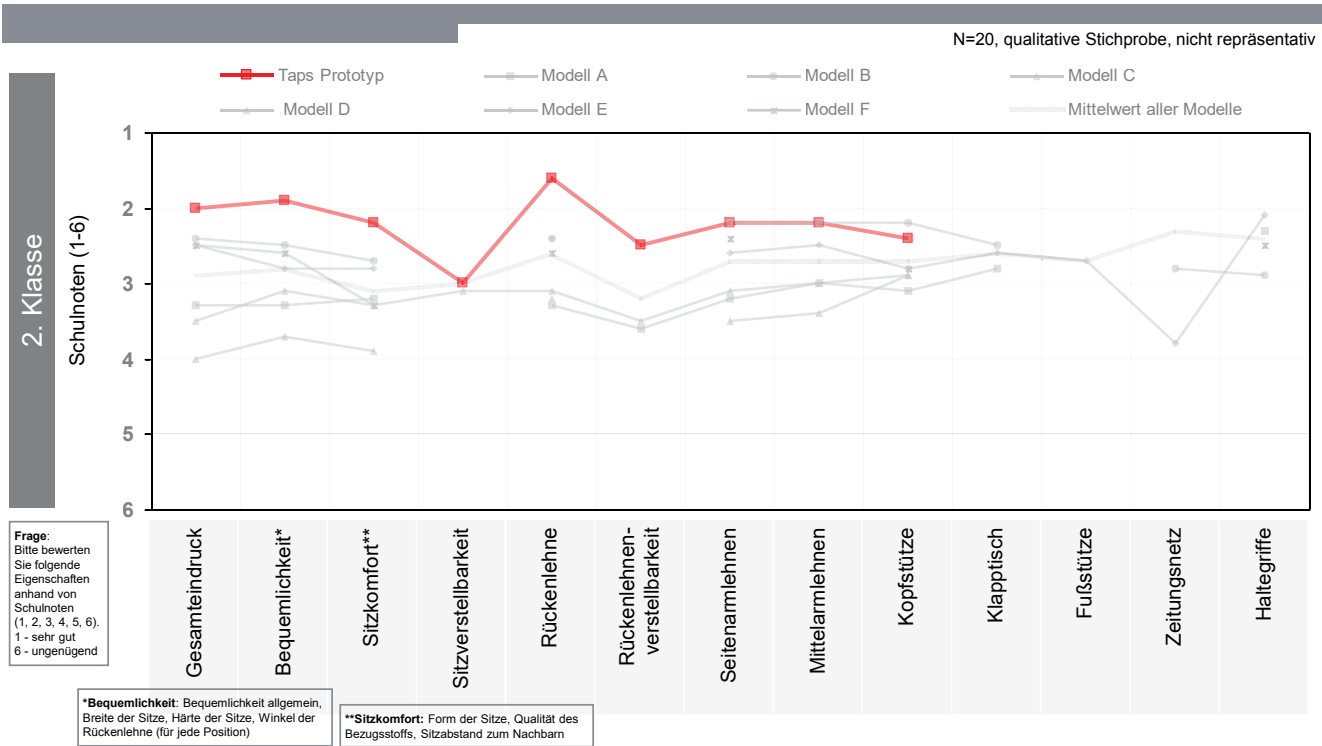


Dokumentation
Produktkatalog DB Regio AG



Passenger seats TAPS in the DB Catalog

Der Sitz liegt aufgrund seines Komforts und seiner sehr guten Ergonomie deutlich an der Spitze.



DB Mobility Logistics AG, GMM 3, Dezember 2011, Muriel Girard-Reydet

The results of testing passenger seats

After completing the designing stage and creating the first seat prototypes in 2011, TAPS was invited to take part in a series for independent passenger tests, organized by DB Region AG.

Among other companies, which involved the biggest producers of seats in Europe, TAPS achieved the highest notes in the “comfort” category for both of its first and second class seats.

The positive outcome of the test resulted in further development of seats for regional type EMU and DMU – currently identified as XCR (class one seat) and XCD (second class seat). After producing the initial series of seats, they undergone a series of tests in independent research institutes, finally earning them a launch on the German railway market with an entry do the DB Regio AG products catalogue.

One of the many unique solutions characteristic for these seats was the Ergocradle™ seat adjustment system developed by TAPS at the time and constantly improved ever since.

The usage of the patterned Ergocradle™ system significantly improves the comfort of traveling in all types of regional trains as well as the IC class.

The Ergocradle™ system has been widely appreciated by many customers and is currently used in over 8000 seats, and will soon be implemented in over 15 000 seats dedicated to use in the upcoming years.

New solutions and opportunities

The standards of ergonomics and comfort developed by TAPS have enabled the company to pursue and to implement new interesting solutions allowing for weight reduction as well as production of



Seat element made in composite technology



Induction charging presented on InnoTrans 2016



Ideenzug mockup

independent and limitless prototypes of seats with an individual design.

In 2012 TAPS, in collaboration with the Technical University of Dresden, developed, and then patented, a light-weight composite technology of seat production.

After years of constantly improving, TAPS has created a new department: The Department of Composites and Development which produces parts, construction and load-bearing elements, as well as an entire seat profiles using this technology. In its structure, the

technology meets all the durability and flammability norms and the process allows for quick prototyping and production. This process reduces the time required to close the moulding process from a few months to a few weeks.

The future of TAPS

The next level of developing new solutions was to start work on more advanced technologies using the integration of electronics and opto-electronics in composite structures. In the year 2016, dur-



Business seats based on the Ergocradle™ system



Noise-absorbing spinning seats



Cabin seats with an increased standard

ing the InnoTrans Expo, the company presented seats equipped with a worktop where the top was developed using the composite technology, including a system of induction charging.

Technology for Design

The composite technology mentioned creates a new approach to designing which enables for a wide variety of personalized designs, for each and every customer, even for short production series.

Also, in cases when the customer expects the product to be adjusted to his individual needs. Currently, the company produces all of its seats using the above mentioned technology in collaboration with designers and designer companies such as Büro + Staubach, or Neomind Design Studio.

The designs which has been developed with the customer create new objects and set new trends. The result of such cooperation was an invitation of TAPS to a project to create a futuristic mockup of a floored train. For the purposes of this project, TAPS prepared and produced a wide variety of innovative seats, all in composite technology.

An example of such a form of cooperation between the customer, the producer and the designer is the current project of modernizing X2000 trains for SJ AB. The end result of such cooperation is a seat which meets all of the customer's expectations including the formal ones (standards and norms) as well as esthetic (an attractive design) and the ones regarding durability. The process of coordination was supported by countless hours of tests and analysis, including passengers tests being conducted in the vehicle throughout the period of 3 months.

In 2016 TAPS started a cooperation to produce seats for the "Idea train" which had its premier in November of 2017. The goal of this project was to set new trends, present innovative solutions which should be included in the newly built German trains. The functional mockup sparked such interest that DB concern decided to present the entire train in the InnoTrans Expo in Berlin in 2018. The presentation will involve a whole range of seats made by TAPS, especially including: seats for standing passengers giving optimal comfort of traveling in the 650 mm range, noise-absorbing spinning seats, increasing the comfort and the silence zone for the passenger, business seats based on the Ergocradle™ system and cabin seats with an increased standard for long-distance trains and regional trains of IC and IEC class.

Bespoke Comfort

New approach to the customer. For a few years now, the company has been developing and directing its offer to the end-customer, creating new products adjusted to individual needs based on experience, know-how and the comfort and ergonomics in TAPS seats.

What is new is the offer of designer workshops where two parties participate to work out the "tailor made" solutions which would meet the customer's expectations. The first designer workshop will take place during InnoTrans 2018 for previously appointed operators.

New technologies – the future of telehealth

After generating a lot of interest with the integration of inductive charging in composite elements, the company is developing this solution in its seats. In the upcoming InnoTrans 2018 expo, TAPS will premier a new seat with a medical applications integrated into it. Pioneer solutions used in this seat will allow for a diagnosis of medical parameters and a direct link to medical analytics. This will



Promotional poster of designer workshop during InnoTrans 2018

provide a massive support for the medical world which is currently facing lack of doctors and where an initial, prompt diagnosis is essential.

Strategic partnerships

Thanks to a constant development of its products, extending the possibilities of traveling as well as giving passengers a wide variety of functionality and finally, changing the approach to using public transport – TAPS has made key strategic alliances and numerous partnership agreements.

Thanks to signing an agreement with 3M, TAPS has developed new technologies and a system of gluing, optimizing the weight. On the stand of the company, TAPS presents a spinning seat using the above mentioned solutions. TAPS recently established partnership agreements include Siemens AG, whose Smart Seat technology will be presented in the Idea train.

We kindly invite you to visit TAPS' stand, hall 3.1 stand 321.

Bespoke Comfort. Please come and explore more than 10 novelties.



Jarosław Nowiński

Jarosław Nowiński Marketing – Project Manager. Composite and Development Department. Working at TAPS in the marketing department for over 5 years. Initially responsible for Polish projects, and support for German-speaking countries. From the beginning, he has been dealing in TAPS with the introduction of composite technology for newly designed and manufactured passenger seats. Currently, Project Manager for contracts on the German market, cooperating with designers and clients in the creation of innovative implementations. Leading the Ideen-Zug project for Deutsche Bahn AG, and responsible for the introduction of new solutions in passenger seats in the field of optoelectronics and telemedicine.