



ŠKODA AUTO a.s. is the largest car manufacturer in the Czech Republic. It has been part of the Volkswagen Group since 1991. It has been the largest Czech company in terms of sales. Thanks to its extensive sales network it is the largest Czech exporter to many countries of the world.

PROJEKT K2 EXECUTION TEAM

GEM System participates in the development of new versions of Škoda Auto products within the „K2 New Generation“ project. It is a CMS tool with associated dynamic tools that, after publishing, will generate the website of the importer, seller or service in the country. The project envisages deployment

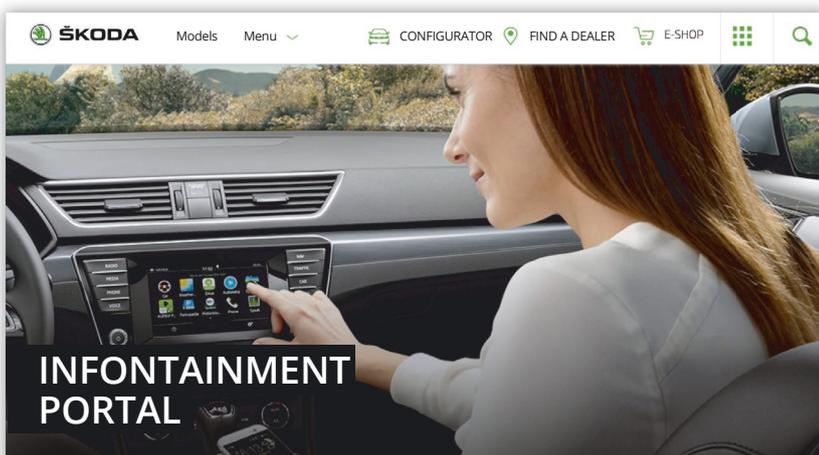
to 100 countries, where it will cover several thousand car dealerships worldwide. For the operation of published website is used by the server Škoda Auto's infrastructure as well as Microsoft Azure cloud centers.

SCOPE AND DETAILS

INDIVIDUAL PARTS OF THE PROJECT

The result of the cooperation is a whole range of support solutions, where our application serves mainly as a pre-sales solution. An exception is the MyŠKODA Portal, whose services are used directly by Škoda car owners. Solutions enable potential applicants of new or stock cars to get acquainted with current model lines, their specific equipment, including its benefit and utility, motorization, technical parameters etc. Consequently allow to choose a given car from stock inventory or direct clients to the car configuration then calculate the list price of the car.

- **K2 New Generation** – is a CMS preparation tool of the Škoda Auto a.s. partners' web portal. The CMS system is developed alternatively not only for the importer's needs, but also for his dealers.
- **K2NG Tools** – on the one hand, represent administrative components, where there is basic data management for the websites of each importer as well as all Škoda Auto dealers. Within the K2NG Tools group, we also participate in the so-called Business tools, which are further integrated as components into the K2 New Generation web portal. The business components have the task of adding certain specific behaviors to the static content (sales of a warehouse car, a special form for verifying feedback, calculating an adequate price for the displayed model, etc.).





IN THE FRAMEWORK OF K2NG TOOLS DEVELOPMENT GEM SYSTEM WAS INVOLVED IN THE DEVELOPMENT OF THE FOLLOWING TOOLS:

- **Stock Cars** – a tool for selling stock cars for individual importers and dealers. The component is consisted of a web application for the sale of stock cars for individual importers / dealers and at the same time of an administration application that automatically processes the data for display on the web.
- **WLTP** – a service that returns the corresponding value emissions and consumption within a given vehicle combination, body, engine, drive and equipment.
- **Model Data Module** – a model management tool of product data of Škoda Auto for individual importers. Based on the data provided in Data Module model in the K2NG web application is displayed detailed information about the car not only according to specific local specifications and also according to the valid local legislation. There is available data of detailed information for a specific model combination, body, engine / drive, gearbox, driven axles and more.
- **Dealer Data Module** – a tool for managing branches in individual countries and their dealers.
- **Forms** – a tool for preparing user importer forms, e.g. to ordering a test drive or local marketing events. It is currently in use in Škoda Auto as an input into GDPR processes. On the one hand, it is used to set up and manage forms and on the other hand to display adequate web form on the importer's website or dealer.
- **Contextual Links Generator** – a tool for managing the transfer of contexts between web applications.
- **Country Specific Module** – a tool for managing importers and their national specifics (language, units, formats, legislative specifics, local customs, cookie settings, etc.).
- **Dealer locator** – is a solution for finding a suitable service or dealer. A tool for finding a specific dealer according to the specified search criteria. It works with Google components, thanks to which it can preferentially offer the nearest dealers of a specific user or provide the user with information about the dealer's distance from a specific point. After the initial search for a specific dealer and displaying its detailed information, the second step is to offer to start navigating to the dealer or direct redirection to his warehouse vehicles or service order portal.
- **Financial Calculator** – a price calculation tool of new cars depending on the defined configuration car. Works with specific prices for given market and offers financing offers according to local conditions.
- **User and Vehicle Passport** - a tool for recording data about the vehicle and its users. It is a backend component that provides information e.g. MyŠKODA Portal application.
- **Availability list** – a tool that provides the user with a list and description of Connect services depending on the specified combination of car, infotainment and production periods. The detailed page of the service provides a detailed description, informative videos and an overview of the countries in which the given service for the specified configuration works. The solution includes an administration application where individual combinations are entered by using an intuitive guide.
- **Others** – in addition to the above tools, GEM System participated in the development of other smaller tools:
 - **Owners manual** – for managing individual manual models by market and equipment.
 - **Recall Action** – for managing recall actions.
 - **MyŠKODA Portal** – is a web application for users registration and login and connection with their car. The car is being identified according to the code of each car and application allows in addition to vehicle status information, display relevant offer of services and goods from the offer Skoda Auto for that car that can be easily ordered.



MAIN DEFINITION OF COOPERATION

On both of the above projects (K2 New Generation and K2NG Tools) we participate in analytical, developmental and testing processes.

As part of our analytical work, we participate in the preparation of the system specification and estimation of its workload, the preparation of change design documents or the preparation of test scenarios. Here we cover the preparation of new test scenarios and, based on the comparison of the analytical assignment with the final application, we enter suggestions for the improvement of specific functionalities.

In the analytical area, we also actively participated in the preparation of the methodology of analytical outputs and documentation.

The second area of cooperation on projects for the company Škoda Auto a.s. is a development work. In this area, we have been intensively involved in the implementation of both the CMS system and related web applications (and their security), as well as on the side of administrative components. Involvement takes place up to the level of Technical leadership of the development team.

Another development area in which we actively participated in the development is the testing area, where our colleagues tested the application according to pre-prepared test scenarios in combination with defined configurations.

TESTING OF IMPLEMENTED PROJECTS AND THEIR CHANGES

Post-implementation requirements tests

– testing of specific functionality after a function was changed.

Automated tests – allow fully automated testing of changes, including a report of results and any deficiencies to eliminate them.

Smoke tests – a quick test of the whole environment and its basic functionalities.

Regression tests – detailed testing of all functions, repeated testing, testing in different order, etc.

IMPLEMENTATION OF THE K2 EXECUTION TEAM PROJECT

in progress from August 2015 to the present