



## National Forest Centre of Slovakia

**Company:** National Forest Centre of Slovakia

**Industry:** Forest Management and policy, Forest Science – public company

### Oracle Technology and Services:

- JDeveloper / ADF
  - ADF BC
  - ADF Faces
- Oracle DB Enterprise Edition
- Oracle Spatial
- Oracle Application Server R3 (Java Edition)
- Oracle Application Server R2 (Standard Edition)
- Oracle Mapviewer, Oracle Maps

### Additional Software

- Subversion
- JDeveloper Subversion Extension
- Windows Server 2003

### Key Challenges:

- Develop web applications to provide standardized information on forests of Slovakia from central forest data warehouse.
- The provided information had to be accessible through a simple but logical user interface based on drill down from national level to the concrete forest compartment.
- Drill down system to find the object of interest was required not only in the form of HTML pages but also in the form of interactive forest maps.
- The application must significantly simplify the ability to locate and visualize forestry information.

**Solution:** Web based application called “The Forest Management Plan“ that provided users with the ability to quickly find and utilize forestry information and drill down on acquired data through the use of digital forest maps. This provided users with a more intuitive way to visualize the geographical information and thus, regulate the forests.

**Executive Summary:** National Forest Centre is a public company responsible for guiding forest management policy in accordance with sustainable development and use of

natural resources at national level. Second mission of the company is the forest science and education.

**The Business Issue:** The forest lands in Slovakia (over 2 million hectares) has to be managed in accordance with the Slovakian Forest Laws and each forest compartment (over 450,000 around entire country) has to have a forest management plan that contains data on the forest and a guide for management. The forest management plan is valid for 10 years. Every year approximately one tenth of all compartments (45,000) are revised by field agents and the data is transferred to the central forest data warehouse. The data is processed and provided to various users (Ministry of Agriculture, Public Forest Offices and other Forest Authorities), mainly in the form of paper reports or desktop offline applications.

The main mission of this project is to provide the required forestry information via the web such that users now have online access to the central forest data warehouse through specific web based applications. This provides users with the ability to easily search for and visualize information and also use digital forest maps to locate information in a more intuitive way and analyze the geographical context.

The first production version of the application was produced in 3 months. Future plans are to extend the application according to feedback from the users and continue on the second application, which is in the development stage and will be fully accessible to the public over the internet.

**The Oracle Solution: Oracle JDeveloper / Oracle ADF, Oracle Application Server, Oracle DB Enterprise Edition, Oracle Spatial, Oracle Maps:** The National Forest Center, in Zvolen, Slovakia, chose Oracle JDeveloper and Oracle Application Development Framework (Oracle ADF) when it needed to build an easy way to track data on the health of the country's forests. The agency's Information Department created a custom Web application called the Forest Management Plan to help the Center in its mission to regulate the forests. With Oracle Database 10g as a foundation, staff members used Oracle JDeveloper and Oracle ADF to craft an application that merged forestry data with forestry maps using Oracle Spatial MapViewer. Now members of the Center and other officials can analyze growth patterns, the range of individual species, and other data to help manage lumber harvests.

The Center compiles forestry data manually using field agents and then puts the information online with its custom application. "Access to the information over the internet wasn't possible in the past," says Branislav Nemec, lead developer in the National Forest Center's IT department. "We had to make a copy of the database or produce reports and distribute them to people," he says.

Nemec credits Oracle JDeveloper's visual editing capabilities with helping his department create the program in about three months. "We had narrowed our choices between Oracle JDeveloper and Borland's JBuilder," he says. "We chose [Oracle] JDeveloper because it provides a simple object table mapping to Oracle Database and a mature framework for

declarative development of business logic layer and data binding. We were able to develop the application without writing a lot of code."

**Project Scale:**

- All management/design/development performed by internal staff
- 3 Advanced Developers
  - 1 JDeveloper/ADF Expert
  - 1 JDeveloper/ADF, Oracle Database Expert
  - 1 JDeveloper/ADF, Oracle Mapviewer, Oracle Spatial Expert
- Approximately 50 screens were developed

**Oracle Value:**

- Thanks to seamless JDeveloper and ADF Faces + ADF BC combination the development life cycle was very short.
- Junior developers picked up the technology very quickly.
- Oracle Mapviewer is part of Oracle AS Java Edition which, makes presentation of GIS data very cheap.
- SSO Technology saved a lot of time spent on developing login modules.
- Oracle Maps were easy to integrate into the JSF application.

**Business Value:**

- Increased customer satisfaction through the facility to easily search for specific forestry information and visualize geographic data.
- Provided an easy way to track data on the health of the country's forests.
- Improved the ability of the Forestry Center to regulate the forests through the web-based application.
- Allowed members of the Forestry Center and other officials to analyze growth patterns, the range of individual species, and other data to help manage lumber harvests.

# Application View:

**CIRKEVNÉ LESY SIELICA, SLIAC, TRNIE**

Stand 2a0 Etáž: 0 < >

Total area: **3.98ha** FTMS: **311** Forest category: **U** Category letter: **b** Slope: **35%** Exposure: **SZ** Forest district: **2003012440002A0**  
 Emission type: **200** Functional type: main: **I** Secondary: **B** Skidd. dist.: **280m** Hygienic zone: **Pásmo ohr.:D**

Accessibility: Nature prot. rate: **1** Terrain type: **4** Eco-region: **---** Particularity: **Recreation area:**

Size of level: **3.98ha** Stand density: **0.09** Stand type: **V** Age: **60** Silvicultural system: **---** Rotation: **90** Reg. period: **20**

Rest. reg. period: **---** Vol. find. method: **1** STMS: **53** Threat level: **1** Fell. urgency: **---** Fell. area: **---** Real thinning area: **3.98**

Mult. thinning area: **3.98** Thinning / ha: **30** Real clean. area: **---** Mult. clean. area: **---** Arrangm. volume: **m3**

Reforest. first: **---** Reforest. repeated: **---** Reforest. from felling: **---** Rare species: **DB,OS,JL**

**Trees description:**

SP	Age	Rep. [%]	Heig. [m]	Dia. [cm]	V [m³]	Site	V/ha	V [m³]	Im. 2 [%]	Im. 34 [%]	Assor. [%]	IAS	S. IAS [%]	A [%]	C [%]	Phe.	Can.	Pro.	A.R. [%]	Dec. [m²]	PF [m³]	IF [m³]	
HB	95	20	23	0.004	28	273	1087							10	40								100
SC	3	20	23	0.003	26	9	36							20	20								5
SM	2	33	44	0.01	42	13	52							20	30								15

**Legend:**

- hranica LHC
- hranica lesnej oblasti
- hranica katastrálneho územia
- hranica JPRL
- hranica poľovného revíru
- JPRL
- poľovný revír

**Layers:**

- off
- Stands
- Poľovné revíry

**Search maps:**

- Orthophotomap
- Borders of KU
- Borders of FMD
- Stand map
- Borders of Stands
- Borders of forest regions
- Poľovné revíry

**Quick search of FMD:**

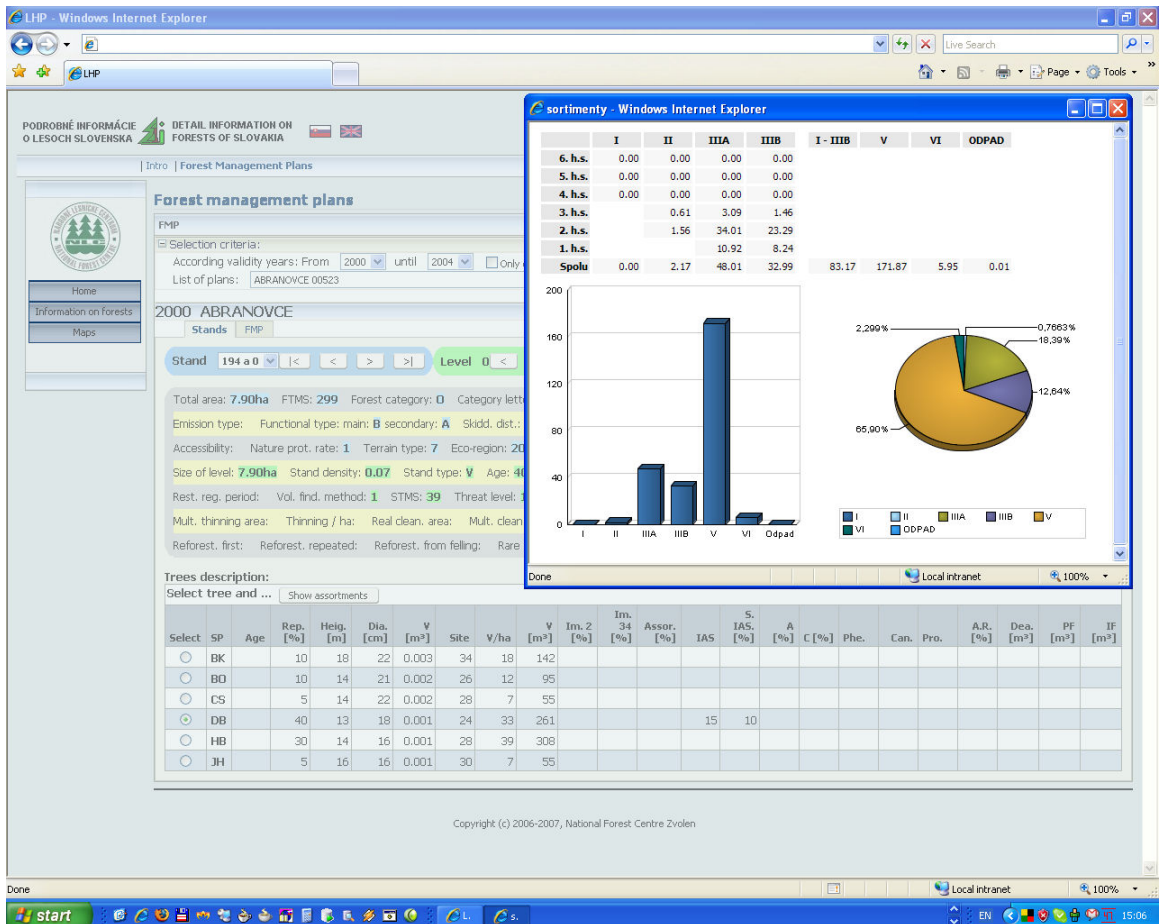
Name %

Search result:

- Závodka
- Zboj
- Zborov
- Zobor
- Zubrohľava
- Zvolen
- Zarnovica
- Zdaňa
- Zelezná Studienka
- Žitavany

Copyright © 2006, Národné lesnícke centrum Zvolen

NFC Application Map



NFC Application Graph

**Credits:**

National Forest Centre of Slovakia  
 Branislav Nemeč, Lead Developer in the National Forest Center's IT department  
 Dana Singleterry, Oracle Corporation