



BIMA - Federal Forestry
Office Division (Bundesforst)



Speech recognition during forest surveys

The Client

Federal Forestry Office (Bundesforst) as a division within the Institute for Federal Real Estate (Bundesanstalt für Immobilienaufgaben) is responsible for „green facility management“ on federal properties. The core competence lies in the customer-oriented and economical care of forests and undeveloped open spaces. This ensures the use, protection and restoration of nature and the landscape in line with federal tasks. Currently, around 368,000 hectares of forest and 207,000 hectares of open space are managed by our federal forest management units and their forestry districts in terms of forestry and nature conservation. This makes Bundesforst one of the largest land managers in Germany.

Bundesforst employees ensure a wide range of services in the 17 federal forestry management units and around 250 forest districts. At the Central Federal Forestry Office (Zentrale Bundesforst), employees in five departments support the work on-site.

www.bundesimmobilien.de/bundesforst

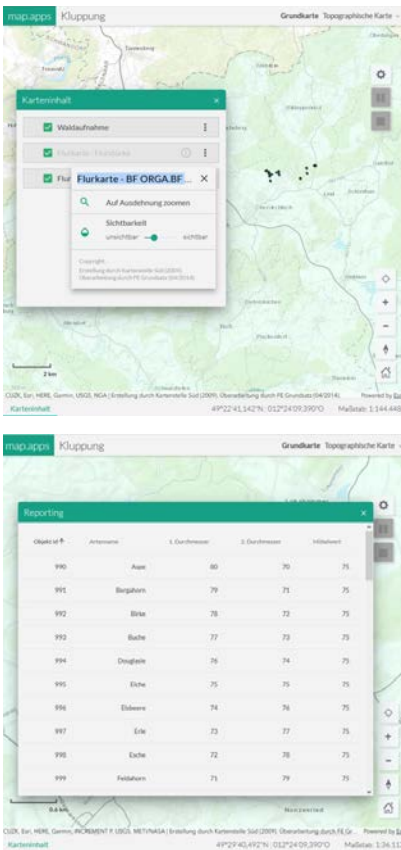
The Task

In the course of an innovation initiative in the federal forestry division (Bundesforst), support for on-site forest surveying using current speech recognition methods was to be tested. This was to be implemented using up-to-date agile methods with the aim of realising a practice-oriented solution promptly and in close collaboration with the users. For the application case, an „on-site“ forest survey was chosen because in this case, in addition to the tree species, the diameter of the trees to be recorded must also be measured by hand. The measurement is carried out two-handed by the person surveying and, if the same person has to note down the values, inevitably leads to a change of work equipment. The use of speech recognition should make this change superfluous and thus optimize the work process.

The Solution

Based on the user requirements and in an agile procedure, a map.apps app was developed that is available on iPads provided by BIMA to the Bundesforst workers who are involved in the project. The users can communicate with the app by voice using Bluetooth headsets and survey new individual trees including information on tree species and the diameters measured. This enables smooth measurement taking without interruptions. Each survey is automatically located on the map based on the current GNSS position. The surveyed trees can then be looked up on the map using the app, and the recorded attributes and calculations can be checked.

Speech recognition during forest surveys



Customer Opinion

Speech recording is a wonderful tool that directly addresses the user's needs thanks to its having been developed in close collaboration.

The PoC implemented is very scalable and therefore also suitable for other usage scenarios, such as in forestry infrastructure or property and facility management.

The Solution is based on

- ArcGIS Online
- map.apps

The Advantages

The use of speech recognition when surveying the forest enables an optimized, uninterrupted workflow. The measurements required for forest surveys can be carried out in a user-friendly manner using the appropriate tools with both hands. At the same time, the measurement data is recorded using speech in the associated app.

Extensive tests have shown that the app's speech recognition delivers convincing data quality even with external interference.

The selected agile approach with intensive user involvement has also proven itself. Within a few weeks, a usable and practice-oriented app was created that offers an excellent user experience. It also shows the great potential of speech recognition for forest surveying.

Summary

- Voice interaction is very well-suited to supporting workflows in which people have to perform two-handed work steps when recording data.
- The app also delivers reliable and practical results even with background noise.
- The agile approach led to a practical and extremely usable app, which ensured a high level of user satisfaction, within a few weeks.

Bundesforst – Zentrale Bonn

Martin Humm
Ellerstraße 56
53119 Bonn, Germany
Phone +49 228 37787 511
BF-Zentrale@bundesimmobilien.de
bundesimmobilien.de/bundesforst

con terra GmbH

Martin Stöcker
Martin-Luther-King-Weg 20
48155 Münster, Germany
Phone +49 251 59689 300
m.stoecker@conterra.de
con-terra.com