



# TAGpilot



**Servicing**

**Inspection**

**Documentation**

## Mobile Maintenance

Description



EUROPEAN  
SATELLITE NAVIGATION  
COMPETITION 2010  
Bavaria Challenge  
presented by 

**TAGnology**  
Intelligent Contactless Identification

## Mobile Maintenance

**The maintenance, inspection, and servicing** of industrial machinery, fire safety and technical systems, and other equipment is essential to preserving their functionality. This means that mobile maintenance processes must be tracked and documented efficiently, and that it must be possible to access data and processes at all times.

### Solution: TAGpilot Mobile Maintenance

TAGpilot Mobile Maintenance provides functions for identifying, localizing, and managing the status of a wide variety of objects. These objects can be any type of goods that are clearly identifiable, whose location must be known, and whose status plays a role in the company's processes. They can also be hierarchically structured.

 **TAGpilot Mobile Maintenance manages these objects, enables structuring, and integrates them into maintenance processes such as inspections.**

### Goals and Benefits

Mobile maintenance offers numerous advantages:

- Digital media instead of paper forms
- Documentation of maintenance activities for components that are subject to regular servicing; compliance with legal requirements
- Cuts down potential for errors caused by media discontinuity
- Less time and effort necessary for planning, inspection, and processing results
- Prompt and centralized processing and analysis of inspection results
- Allocation of maintenance activities to external service providers
- Less time and effort necessary to locate mobile objects
- Reduces the risk of mixing up objects
- Allows storage of maintenance data on the object and reading of object status without a connection to the server (offline capability)

### Identification of the Objects

**For clear identification, objects are fitted with a tag**, which can be a transponder (RFID), a barcode (1d, 2d), a contact memory button, or a sensor node (with temperature monitor, motion sensor, acceleration measurement).

## Central and Mobile Components

TAGpilot Mobile Maintenance comprises a central and a mobile component — the TAGpilot server and TAGpilot Mobile. Tasks are set up on the central TAGpilot server, where the inspection results are also analyzed. TAGpilot Mobile is used to carry out an on—site inspection of the object with the aid of a mobile data entry (MDE) device.



## TAGpilot Server

The TAGpilot server provides a number of centralized functions, including:

- Free definition of activity types, steps, and processes
- Distribution of tasks to MDE devices in accordance with authorization rules
- Documentation of maintenance activities and inspection results
- Visualization of objects' positions in certain areas or using GPS
- Reconciliation of master and test data with back end systems using TAGpilot data link modules such as Data Link SAP

## TAGpilot Mobile

TAGpilot Mobile provides the following functions on MDE devices for the inspection of objects:

- Free configuration of the test dialog on the MDE device based on the TAGpilot Mobile framework
- Automatic retrieval of pending inspections
- Menu and form—guided implementation of the individual steps of the task
- Locating of assets using GPS coordinates or location tags
- Support of different communication channels; can be used offline or online

## Visualization of Object Positions

The positions of objects can be defined using location tags, GPS, or manual input.

## Mobile Maintenance Process

The mobile maintenance process consists of the five steps illustrated in the figure below. An "action" is an activity that is initiated based on the results of the inspection, for example the replacement of defective components.



## Inspection with MDE

When an inspection task is communicated, it is made available to the legitimized test personnel on the MDE device. The inspection task that appears is for a specific extinguisher system, a specific user group, and a specific time.

## Task list on MDE device

The inspector who loads the assignment onto his MDE device is registered on the server as the task owner. On his MDE device, the inspector then selects the task he is going to carry out and begins to perform maintenance.

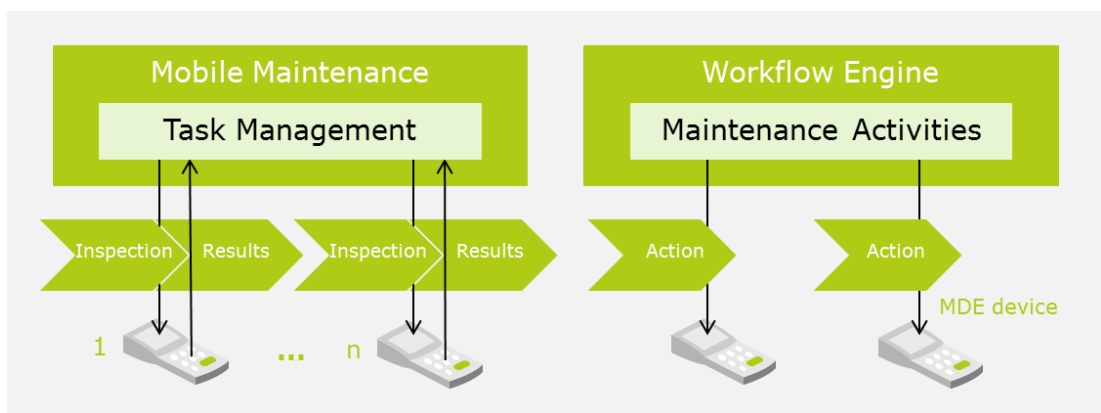
## Analyzing and Saving Test Results

The results of the test are sent from the MDE device back to the TAGpilot Mobile Maintenance Server for analysis and persistent documentation.

## Automatic Initiation of Actions based on Inspection Results

The TAGpilot workflow engine makes it possible to trigger actions based on the results of an inspection and provides for almost unlimited configuration. An example of this type of automatic workflow is the transfer of inspection results to back end systems such as ERP, MES, or SCM systems, e. g. SAP PM.

## Basic Principle of Data Flow in Mobile Maintenance



## Multi-stage Model for Introduction

TAGpilot Mobile Maintenance makes it possible to introduce the system in several stages. The objective is to implement an initial solution quickly, resulting in immediate, concrete benefits.

## MDE Devices

TAGpilot Mobile Maintenance is **compatible with a large number of MDE devices that are available on the market.** (A list of compatible devices will be provided upon request.) Depending on the type of tag selected, Mobile Maintenance has a module that allows the reading of the tag's status information using a NFC—compatible mobile telephone.

## Expandability

**TAGpilot Mobile Maintenance can be seamlessly combined** with TAGpilot vehicle management and TAGpilot container management products.



TAGnology Systems GmbH  
Benzstr. 3  
76185 Karlsruhe  
Germany

Phone: +49(0) 721 / 75 40 78 31  
Fax: +49(0) 721 / 75 40 78 32  
[www.TAGpilot.de](http://www.TAGpilot.de)  
[info@tagnology.com](mailto:info@tagnology.com)

