

The scientific and technological objectives of MAINBOT are addressed through **7 work packages** developed during **36 months** to be

A summary description of the WP activities is as follows:

### **WP1 Project management (TEKNIKER)**

The aim of this WP is ensuring the project meets its goals and overall objectives. It includes and implements all management activities.

### **WP2 User requirements and scenario definition [TORRESOL]**

Deep analysis of requirements and definition of the real working scenario for validation, including the definition of metrics. The requirement definition will be based not only at task level, but mainly in terms of Reliability, Availability, Maintainability and Safety (RAMS) of the final solutions.

### **WP3 Basic technologies for mobile robotics in maintenance [IFF]**

The WP is devoted to solving the technical challenges in terms of robot localization, navigation and sensor based manipulation. As well as the design of needed changes on the existing platforms that will be taken as starting point. It also includes the general system architecture and interoperation mechanism design.

### **WP4 Mobile robots for plant inspection and maintenance development [ROBOSOFT]**

The aim of the project is not to develop robots from scratch, but to incorporate the needed changes to existing platforms (either on hardware and software) to make it possible their use in testing and maintenance. In this WP those modifications identified in the previous WP will be implemented.

### **WP5 Automatic Robotic based inspection and maintenance [TECNATOM]**

Non-destructive testing systems have to be adapted in order to be possible autonomous robot based operation. It includes features like correlating real-time inspection results with mobile manipulator position (for later localization and repair), adapting velocity to inspection process, etc. However the main requirement is automatic data analysis and smart context aware fusion of different inspection techniques.

### **WP6 Scenario development and validation. Industrial demonstrator [TEKNIKER]**

Mobile robots and manipulators programming and control integration. It includes creating a common framework that receives as input High level maintenance tasks, human commands and produces robot task plans, schedules them and provides the results of inspection/maintenance to plant level control systems.

In this WP all validation procedures are carried out according to the definition in WP2. The result is a set of robots working in a real industrial plant, performing inspection and maintenance activities. The demonstrator will be build up in one thermal solar power plant in the south of Spain.

### **WP7 Project Dissemination and exploitation(IFF)**

The aim of this WP is to guarantee an effective dissemination of the project results, as well as the proper use and exploitation of the project results in accordance with the Consortium Agreement.

