PARAMOUNT – A Local Based Service (LBS) Prototype for Mountaineers and Rescuers

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Presentation Overview

- **Introduction to PARAMOUNT**

- **Motivation & Objectives**

- **System Overview**

- **PARAMOUNT Services**

- **Mobile Client 'TourGuide'**

- **Experiences & Test Results**

- **Conclusions & Outlook**

Introduction to PARAMOUNT

- **What is PARAMOUNT?**
  - Mobile Navigation and Information System (prototype) for hikers
  - Support Tool for Search & Rescue (SAR) services in the mountains
  - Project funded by the European Commission (IST programme)

- **Who has developed PARAMOUNT?**
  - International European consortium of 5 partners:
    - IfEN GmbH, Poing/GER *(Coordinator)*
    - AGIS, University of the Bundeswehr Munich, Neubiberg/GER
    - ICC, Barcelona/Spain
    - Bavarian Mountain Rescue Service (Bergwacht), GER
    - Austrian Mountain Rescue Service (OEBRD), AUT

- **Project Time Schedule?**
  - Duration: 20,5 months (Project end: October 2003)

Motivation & Objectives

● **General Objective:**

Contribute to the improvement of user friendly info-mobility services, especially for mountaineers, by combining **Satellite Navigation** (GNSS) and **Telecommunication** (GSM/UMTS) with **Geoinformation**

● **Main Objectives:**

▶ Development of prototype Location Based Service (LBS) for mountaineers in test areas in the Alps and Pyrenees

- Integration of positioning/navigation, communication, coordination and information service
- Implementation of safety features (SAR functionality; safety relevant information) allowing for immediate and appropriate help from outside in critical situations
- Integration of appropriate information and coordination functionality for mountain rescue teams
- Development of a procedure for capturing/updating GIS data by involving the users

▶ Demonstration and proof of feasibility of such a LBS in mountainous terrain

# PARAMOUNT System - Overview

GPS

PARAMOUNT Services

Hiker

GPRS

SAR team

DATA INFO SAFE

Tracking

Emergency Call

Maps

POI

Routing & Guidance

Avalanche

Weather

SAR Center client (web-based)

INFOTOUR

- **Download and visualization of appropriate maps depending on the current user's location**

- **Displaying the user's position and heading on the map**

- **Providing Points of Interest (POI) like mountain summits, huts, transportation facilities etc. to the user**

- **Providing further information on those POI**

- **Offering online-routing and guidance assistance to the hiker**

- **Providing further information like links to weather forecast**
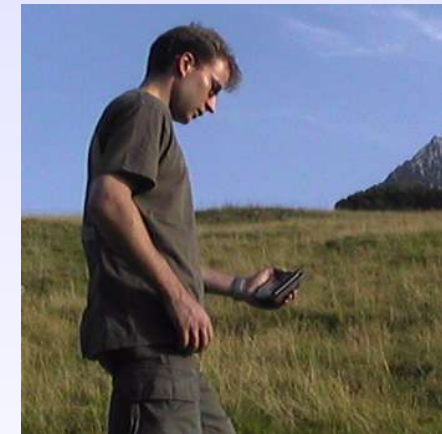
SAFETOUR

Offering safety-increasing functionality to the hiker

- **Tracking of the user in dangerous situation**
- **Sending an emergency call (incl. position) to the mountain rescue authorities**
- **Information on regional avalanche hazard in maps and diagrams**
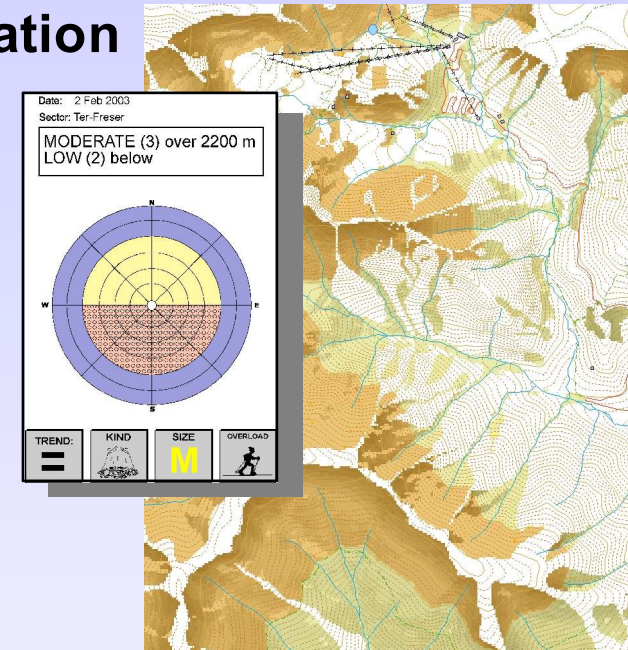
Supporting the SAR (Search-and-Rescue) missions

- **special featured TourGuide hardware/software for SAR teams**
- **'SAR Centre' mission control panel**
  - ▶ **Visualization in 2D/3D of the emergency position**
  - ▶ **Visualization in 2D/3D the current positions of the SAR teams**
  - ▶ **Tool to manage plenty of mission status information**

SAFETOUR – SAR Center Client

SAFETOUR System Overview

Emergency Call

G P R S

SAFETOUR Server

INFOTOUR Server
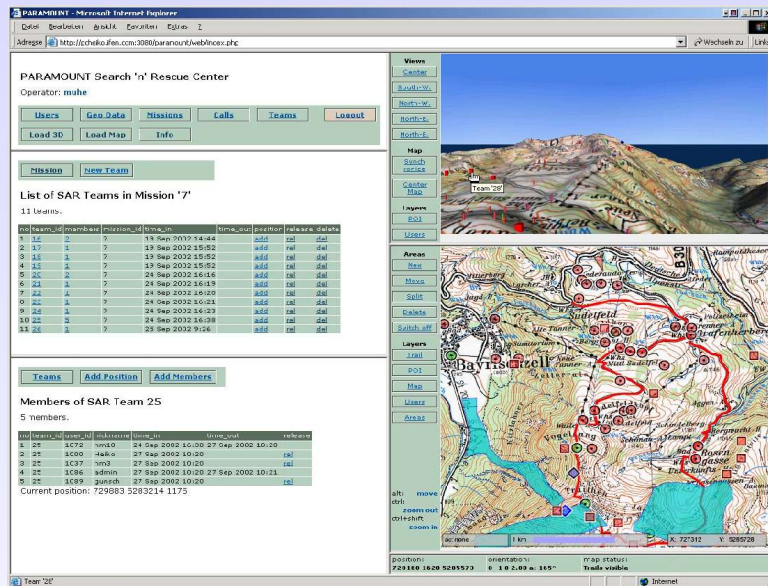
'SAR Centre Client' (Internet based)

SAR Teams

DATATOUR

- **Directly involving the users in the geo-data capturing and maintaining process**

- **Update/completion of the service database using logged data and information input from dedicated hikers for:**
  - ▶ **Trails (logging)**
  - ▶ **Capturing/updating information on Points of Interest**

- **Semi-automatically processing and verification of the collected data**
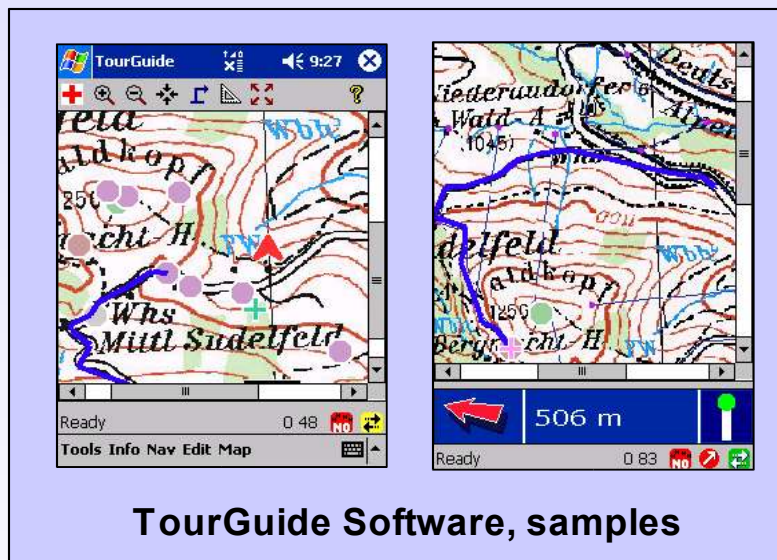
Mobile Client 'TourGuide'

- **Client Hardware:**
  - Pocket PC
  - GPS receiver module (e.g. Compact Flash Card or Bluetooth receiver)
  - GSM/GPRS communication component (e.g. PC card or internal module)

- **Client Software:**

  Developed in C++ (MS eVC3.0)

  Multi-language GUI

TourGuide Software, samples

Standard HW

Ruggedised outdoor HW (e.g. for SAR teams)

Mobile Client – Tourguide GUI

Guidance view

Center map

Measure distance

Zoom map

Full screen

Emergency call

Help/About

Status info

Status of Internet connection

Status of GPS availability

Ready

Tools Info Nav Edit Map
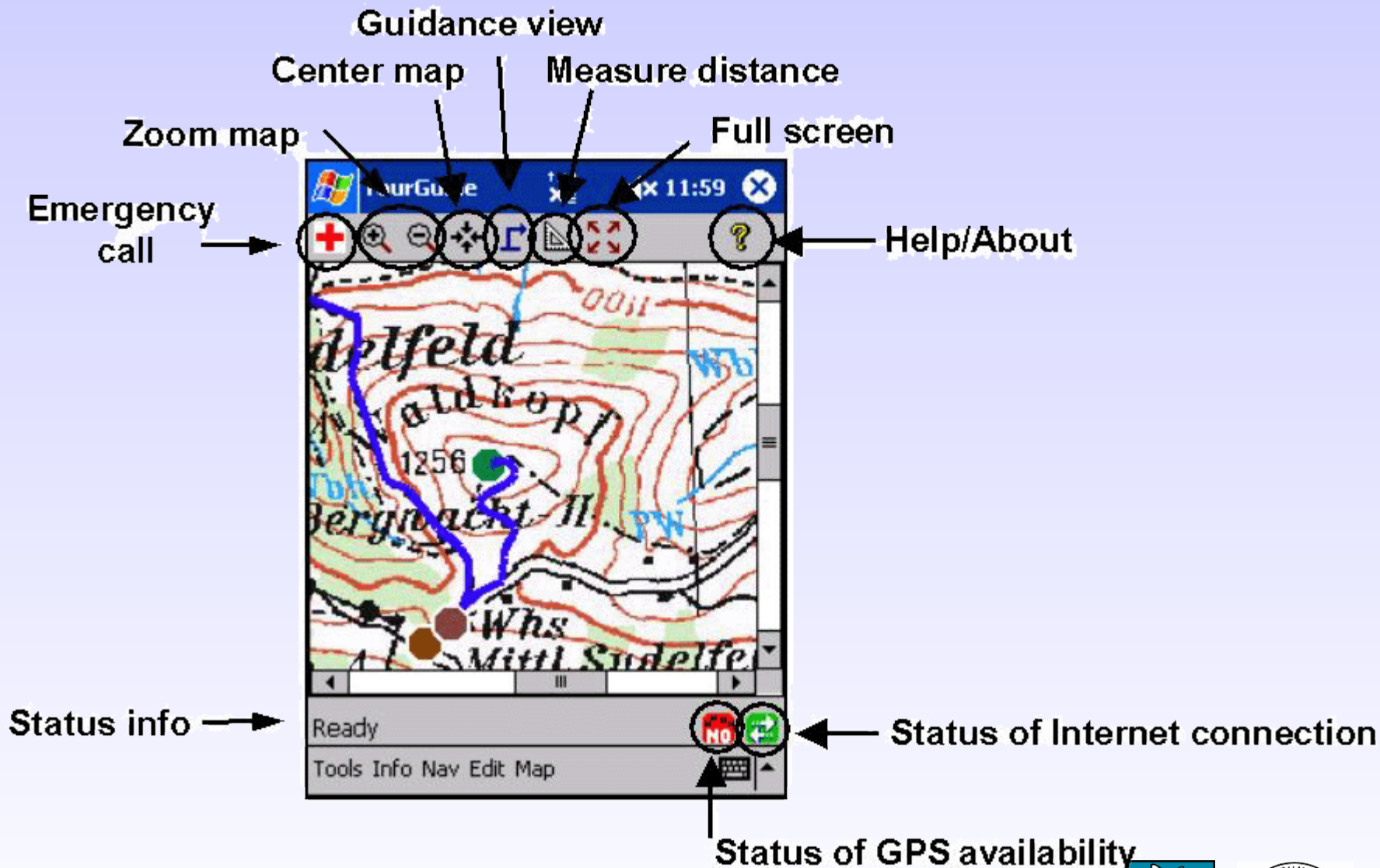
Experiences & Test Results

Extensive field-tests

- ► Test phase: 03 - 07 / 2003
- ► Tests with interested hikers and SAR representatives

- 🔴 **High acceptance of mobile TourGuide HW/SW by users**

- 🔴 **Mobile client battery capacity sufficient for day trips**

- 🔴 **SAFETOUR features well suited to make SAR missions faster and more effective**

- 🔴 **Further efforts necessary to improve service robustness & reliability**

Conclusions & Outlook

- **Tested and evaluated running prototype system for two particular demonstration areas in the German Alps & Spanish Pyrenees**

- **Very positive feedback concerning the implemented functionality from many demonstration attendants, testers**

- **Currently preparation of a regular PARAMOUNT service in a dedicated pilot area in the German Alps**

- **SAFETOUR features enabling application of new support and control functionalities to other public areas, e.g. fire brigade teams, police special forces**

➡ **For further info please visit: www.paramount-tours.com**

"…also high fun factor for technical open-minded hikers…"

"…surely high market potential…"