

# Urban Environmental Monitoring - ADVA

The objective of ADVA User Experiment is to demonstrate the best practice use of an embedded TCP/IP communication based system and the adoption of an Open Source Operating System for the monitoring of urban environment in Slovenia. Other than providing the information to the interested stake holders through this network environmental will also be provided to citizens.

AMES develops and manufactures different meteorological sensors, instruments, microcomputer based automatic metering stations and complete computerised measuring systems including radiological probes. With more than 200 automatic stations installed in Slovenia AMES has also delivered meteorological stations to Bosnia, Croatia, Albania and Serbia, for the International Agency of Atomic Energy in Vienna, Austria and stations to Egypt, Algeria, Pakistan and Mexico.

## AMES

Employees in 2002: 10

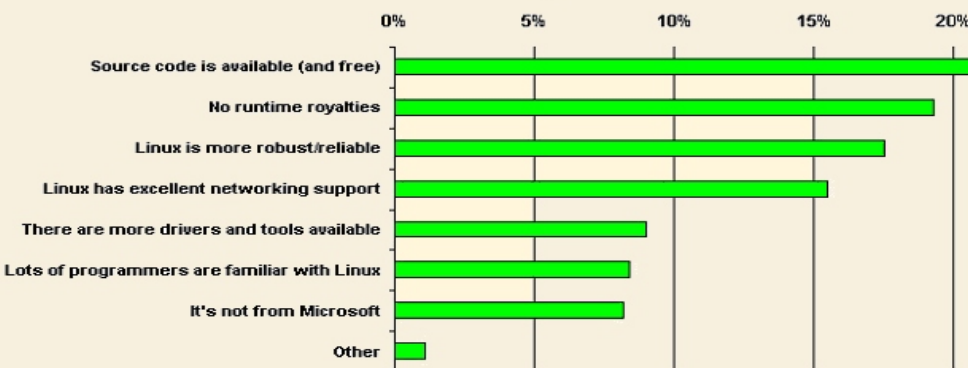
Turnover in 2002: 1.540.000 EUR

Industrial Sector: Monitoring of urban environment

Technology introduced: Red Hat Linux v8.0 and Linux Suse v8.2

## ECONOMIC BENEFITS

What are your main reasons for wanting to use Linux in embedded applications?



Source: LinuxDevices.com survey, December 2000 -- <http://www.linuxdevices.com/polls/>

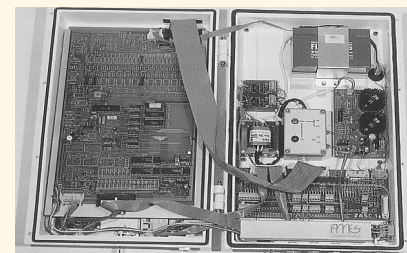
Direct benefits for the company:

- a payback period of ADVA project about 16 months,
- return of investment of over 450% by 2005,
- increase in profit,
- double sales every 3 years.

## PRODUCT IMPROVEMENTS

Improvements and/or new functionalities:

- use of TCP/IP as standard protocol,
- remote access via a dial up connection or Internet Service provider,
- migration from desktop PC to an embedded computer with Linux OS,
- modularized hardware and software components,
- the ability to run diagnostic functions and upgrade remotely.



# Innovation with Microelectronics

# Industrial Embedded Systems - INES

## How to Go About It?

### TECHNICAL CHOICE OPTIONS

EIS software applications are currently based only on MS Windows™ operating systems. Due to technical problems and licensing policy, a number of users encourages migration to open source operating systems. The requirement for a robust, well supported operating system is satisfied by Linux, a real multitask Unix-like open source platform. EIS design based on Linux requires:

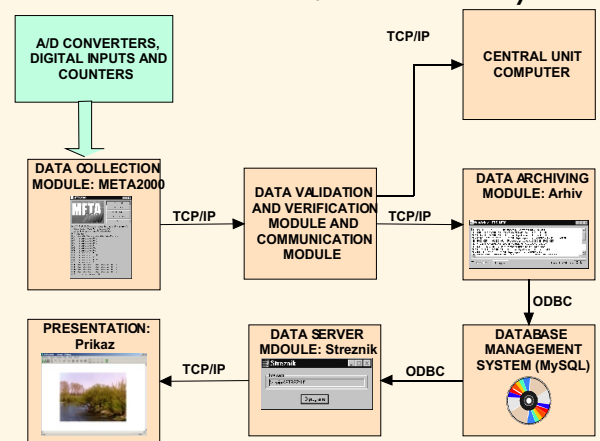
- transfer of all basic software components (dedicated data acquisition, data storage, server and presentation programs) to the new environment and
- Use of open source database management systems as MySQL and open source ODBC driver manager / administrator *unixODBC*.

TCP/IP will exclusively be used as a standard protocol to interconnect stations and centers.

### TECHNICAL IMPLEMENTATION

User Experiment will allow AMES to develop a new generation of environmental monitoring systems with a revised and improved customer support, as a result of adopting the embedded open-source and TCP/IP technologies. It will also act as a case study to other SMEs and to the users of the environmental information, demonstrating how to achieve an integration of environmental information networks on the basis of reliable, cost-effective SW solutions and contemporary Internet connectivity.

Structure of TCP/IP connectivity



EC IST Programmes aim to improve the competitiveness of European enterprises by promoting the adoption of under deployed or emerging technologies. This will enable these enterprises to increase their competitiveness and enhance their economic growth. The demonstrator described here is one example of the many Best Practice projects undertaken. Further details of projects covering a wide span of applications, industry sectors and technologies can be found on [www.eurojoin.org](http://www.eurojoin.org).

For information on the User Company:



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