LIFE-Environment demonstration projects	FORM S2A. Project Summary	
EUROPEAN COMMISSION ENVIRONMENT DG	FOR COMMISSION USE ONLY	**LIFE04 ENV/DE/000054 UFIPOLNET**

SUMMARY OF THE PROJECT (ENGLISH VERSION)

Project title (precise translation of original title):
UFIPOLNET Ultrafine particle size distributions in air pollution monitoring networks

Objectives (maximum 1000 characters)

The objective of the project is to **demonstrate an applicable and affordable measuring device for ultrafine particles that can be implemented all over Europe**. The 4 prototypes will demonstrate that **reliable and comparable data** for various kinds of analysis can be provided with the device. It can easily be integrated in existing measuring containers for air quality. The prototypes will be **predecessors of in series produced size spectrometers** that will be put on the market by one of the partners. Due to a new structure of the device the **price will be much lower than the price for existing devices**. Therefore it will be possible for routine measuring networks in all parts of Europe to acquire this device.

An affordable device is the precondition for the establishment of a network **of measuring stations all over Europe** providing comparable data about number concentrations of **ultrafine particles (UFP).** The data is necessary for scientific studies on the **effects of ultrafine particles on human health**, especially concerning children, and the assessment of environmental risks. This project will make a strong contribution to research and initiatives in the area of health and environment.

The results of this project will be provided to the working group on the "Particulate Matter" of the thematic strategy **CAFE (Clean Air for Europe)**" of the Sixth Environment Action Programme, who has the objective to support the European Commission's review of the **First Daughter Directive (DD) 1999/30/EC.** They stated in their second position paper on PM (August 2003): "(…) **Member States should be asked to carry out more research in the coming years to establish more valid information on these PM metrics (UFP and PM1.0) with regard to both concentration levels and adverse health effects**. **The Commission should collect and review the results of this work within five years." CAFE** is one of **seven Thematic Strategies** foreseen within the **6th EAP**. One of its **objectives** is to achieve **levels of air quality** that do **not give rise to unacceptable impacts on**, and **risks** to, **human health and the environment**.

Actions and means involved (maximum 2000 characters)

The Saxon State Agency for the Environment supported by UBG and IfT has already 2 years experience in implementation, operation and data reduction with a pilot size spectrometer to measure the number concentrations of ultrafine and accumulation mode particles in Dresden. The costs of the device were approx. 150,000 EUR.

- Project structure and financial plan will be developed and updated during the project by LFUG.
- An initial Workshop and the last workshop of 3 will be held at Dresden. All workshops will be organised by LFUG. During the workshops the steering group will meet.
- Partners from different measuring networks, health experts and the producer of the device will find technical solutions for an efficient and affordable device (**about 20 - 30,000 EUR**).
- The new, simple and fully automated spectrometer will be designed in a co-operation between the IfT, GSF and TOPAS. The other partners will consult this process. Existing parts will be adapted and optimised for the device.
- To develop a reduced measuring method (size range etc.) details will be discussed with the partners, who are experts in health or operators of measuring stations.
- The innovative, affordable and reliable system will be assembled mainly using existing parts.
- It will be tested, calibrated and maintained by a partner (IfT), who is a worldwide known expert in this technique.
- The particle size distribution of ultrafine particle number concentrations will be specified within a size range of approx. **12 - 500 nm**.
- The prototypes in Dresden, Stockholm and Augsburg will operate in parallel with existing reliable size spectrometers to compare and evaluate the data.
- For each measuring network the software and hardware will be adapted by IfT, TOPAS and the operators of the measuring networks.
- The data will be reduced in the time scale and stored on a PC at the measuring station ready for transmission to the central database.
- The second workshop will be organised at the IfT to educate future users in operating and maintaining the new size spectrometer. Experts will be sent to the sites to support the implementation.
- During the project the new devices will be operated for more than one year to demonstrate, that the systems works reliable. The measuring data will be collected and evaluated every month. First results will be reviewed by all partners to optimise the used methods. After the project the operation will continue at the measuring sites.
- The IfT will also support the partners at further data evaluation and interpretation. The quality of the data and the measuring device will be evaluated during the last year of the project.
- TOPAS will evaluate the potential of future production and put the device on the market.
- A homepage and information leaflets as well as scientific papers and press releases will be distributed.

Expected results (maximum 1000 characters)

- 3 Workshops and minutes.
- 2 intermediate and the final report.
- Test report of the first prototype.
- The project will establish an inexpensive system for measuring size distributions of ultrafine particles in official public measuring networks in Czech Republic, in Germany and in Sweden.
- **Four prototypes** will be installed at measuring **sites with high traffic load in Dresden, Augsburg, Prague and Stockholm**, representing different climatic situations and partly a different composition of the vehicle fleet.
- Stable delivery of reliable data with an availability of 80%.
- Data will be available in different kind of measuring networks.
- The devices will work at least for one year.
- Report with the presentation of the data based on datasets from the 4 measuring stations.
- After the project the operation of the devices will be continued for several years.
- The 4 prototypes will not be sold after the project. The owners of the measuring network will keep the devices running at least for 5 years (2012) after the end of the project.
- Other institutions, authorities and the general public will be informed about the results of the project by a homepage, scientific publications, brochures, congresses, fairs and the final congress.
- The results of the project will be transmitted to working groups (**CAFE, VDI**) dealing with ultrafine particles.

– MAXIMUM NUMBER OF CHARACTERS GIVEN MUST BE RESPECTED