FINNISH METEOROLOGICAL INSTITUTE

МИНИСТЕРСТВО ЗА ЖИВОТНА СРЕДИНА И ПРОСТОРНО ПЛАНИРАЊЕ

TWINNING INTERIM QUARTERLY REPORT number: 3

European Agency for Reconstruction

TWINNING PROJECT

INTERIM QUARTERLY REPORT

Project Title: Air Quality Improvement

Partners: The Finnish Meteorological Institute and the Ministry of Environment and Physical Planning

Date: 15th June 2007

Agency Contract Number 05MAC01/13/102

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Section 1: Project data

Twinning Contract Number	MK05/IB-EN-01
Project Title:	Air Quality Improvement
Twinning Partners (MS and BC)	The Finnish Meteorological Institute and the Ministry of Environment and Physical Planning
Report Number:	3
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List of Abbreviations and Acronyms

BC	Beneficiary Country
BTX analyser	An analyzer which measures benzene, toluene and xylene isomers in the air, also called BTEX analyser
CADASTRE	Cadastre of Air Polluters and Pollutants in the Republic of Macedonia, 2004 (also KATASTAR)
CARDS 2004	CARDS 2004 project “Environmental management strengthening”
CARDS 2005 project	CARDS 2005 project "Strengthening of Environmental management, former Yugoslav Republic of Macedonia"
CAR	FMI Model for estimating the concentrations originating from traffic (FMI)
CCEA	Climate Change Enabling Activities Office
CLRTAP	Convention on Long-Range Transboundary Air Pollution
CRF	Common Reporting Format (UNFCCC)
DD	Daughter Directive
DeNOx	Nitrogen oxide (NOx) reduction
EAR	European Agency for Reconstruction
ECMWF	European Centre of Medium Range Weather Forecast
EEA	European Environment Agency
ETC-ACC	European Topic Centre – Air and Climate Change
EPER	European Polluting Emissions Register
EPRTR	European PRTR
FEA	Federal Environmental Agency (Umweltbundesamt)
FMI	Finnish Meteorological Institute
FWD	Framework directive (92/62/EC)
GC	Gas chromatoraph or gas chromatography
HM	Heavy metals (or trace elemements)

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HMA	Hydro-Meteorological Administration
ICEIM-MANU	Macedonian Academy of Sciences and Arts, Research Center for Energy, Informatics and Materials
KATASTAR	see CADASTRE
KS	Key Source
LAT	Lower Assessment Threshold
LCP	Large Combustion Plants (EU Directive)
LPS	Large Point Sources
MEIC	Macedonian Environmental Information Centre
MEPP	Ministry of Environment and Physical Planning
MPP	FMI Meteorological PreProcessor (FMI)
MS	Member State
NCCC	National Climate Change Committee
NE	Not estimated
NEC	Net Emissions Ceiling (EU Directive)
NITL	National Inventory Team Leader
NFP	National Focal Point
NFR	Nomenclature for reporting (CLRTAP)
N.N.	No Name
PL	Project Leader
PM	Particulate Matter
PMT	Photo Multiplier Tube JÄTÄTKÖ
PRTR	Pollutant Release and Transfer Register
QA/QC	Quality Assurance and Quality Control
RIHP	Republic Institute for Health Protection
RTA	Resident Twinning Advisor
SCR	Selective Catalytic Reduction

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SEA	Secretariat for European Affairs
SOP	Standard Operation Practise
SRS	Sector of Regulation and Standardisation of the MEPP
SSO	State Statistical Office
SYKE	Finnish Environment Institute
UAT	Upper Assessment Threshold
UBA	Umweltbundesamt, Austria
UDM	FMI Urban Dispersion Modeling System for stationary sources (FMI)
UNFCCC	United Nations Framework Convention for Climate Change
UNECE	United Nations Economic Council for Europe
VBS	Visual Basic Script
VOC	Volatile organic compounds
VTT	Technical Research Centre of Finland

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Section 2 and 3: Content

This section describes the activities of the project. It is divided in five sections.

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2A - BACKGROUND

Policy Developments

The Minister of Environment and Physical Planning changed 21 February 2007.

During the reporting period covered by the Quarterly Report, the following activities related to a further development of the legislation through transposition of Directives relevant to air, have been carried out in the Ministry of Environment and Physical Planning:

1. The CARDS 2004 Project – Environmental management is finished:

The component 3 Preliminary assessment of zones and agglomerations is finished and the final report was finished.
Under the legal component, in relation to secondary legislation development, the following legal acts have been drafted:
- Rulebook on the introduction of CORINAIR methodology
- Rulebook on preliminary air quality assessment and establishment of zones and agglomerations in the BC
- Rulebook on substances and their emission limit values for which IPPC licences B exist.

The draft rulebooks are commented by BC experts.

2. Under the CARDS 2005 Project - "National Strategy for Environmental Approximation"
In the air component, implementation plans and costs analysis were prepared for 96/62/EC and 2000/81/EC Directives, tables of concordance and implementation tables were also developed for other relevant Directives, such as 99/30/EC, 2003/ 87/EC, 96/62/EC, 2001/81/EC .
- Under the project, prioritisation of the directives included in this project was made
- Draft versions of implementation plans for 96/62/EC and 2001/81/EC

The Directives are commented by the BC experts.

3. Under the project COWI Progress monitoring:
The remarks given by the project leader Kristina Federlin were taken into account in the prepared TOC and Implementation tables for the air quality directives (99/30/EC;2002/3/EC;2004/107/EC;2000/69/EC;2001/81/EC;)

4. Cards 2006 project started, the project goals are:

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- Support for remediation of the hot points
- Development of four plans for rehabilitation

5. Amendment and Supplementing of the Law on Environment
The Law on Environment was amendment and supplemented. In this context, Articles regulating environmental monitoring and data reporting, Indicators based Report development and State of Environment Report, were amended to be more detailed.

6. Amendment for The Law on air quality
Amendments on law on air quality were made in order to accomplish full implementation of air quality framework directive. The amendments adopted by the government are in process of adopting by the parliament.

7. National set of indicators
The proposal for the national set of indicators for environment was adopted by the government. Forming of the working groups for harmonization of different types of indicators is in progress.

According to the Twinning contract the project has been assisting in implementing the air quality framework directive, in preparing relevant secondary legislation and in upgrading skills required to operate a significantly developed automatic ambient air quality monitoring network with supporting laboratory services. The project has 5 components (guidelines and secondary laws, emission inventories, preliminary air quality assessment, air quality measurements and laboratory works, and dispersion modelling).

First steps for the developments in legislation and developing automatic ambient air quality monitoring network with supporting laboratory services have been taken in the Twinning project. A proposal for the future National System for air emission inventories and an establishment of a central national database for air emission inventories to improve emission inventories have been done. A plan to improve methodologies of preliminary assessment has started.

For ambient air quality assessment and management including air quality modelling the availability and quality of relevant meteorological data is very important. Recommendations concerning the importance of the modernization and automation of the observation network including the upper air soundings, data acquisition, easily accessible database system and the data quality control have been given to strengthen the capabilities of the HMA in the future.

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The Meteorological Pre-Processor programs in MEPP and the dispersion model for stationary sources UDM-FMI have been installed and implemented. A practical guidance are given to the BC experts in the use of UDM-FMI and an updated version of CAR-FMI models and detailed information on the input data requirements of these models, thus improving the capabilities of BC to environmental impact assessment and strategic environmental assessment

A new Minister of Environment, Mr. Dzelil Bajrami, took office on February 21 2007, coming from the same party as the previous one Imer Aliu. He has not yet made himself familiar with the key persons in the Twinning Project from the MS and BC side He has not met them despite suggestions for meetings from the Twinning project personnel.

Capacity of technical personnel has improved for operation, maintenance, calibration and repairing of instruments in the monitoring station and calibration instruments in the calibration laboratory (reference laboratory).

Project Assumptions

It has been expressed in the article 2 of the working plan in the Twinning contract that the Twinning project Air Quality Improvements relates to article 103 of the SAA, which mentions that “the Parties shall develop and strengthen their cooperation in the vital task of combating environmental degradation, with the view to supporting environmental sustainability”. It adds that “Cooperation should focus on several priorities”, including “combating air pollution, environmental impact assessment and strategic environmental assessment, continuous approximation of laws and regulations to Community standards”.

The assumptions given in the Twinning contract are shown in the following table.

Table 1. ASSUMPTIONS from the Twinning contract

Component Number	Assumptions	Status
I	Cooperation and outputs of CARDS 2004 and CARDS 2005 projects Translation of legislation and documents Co-operation with the relevant stakeholders	Fulfilled Partly fulfilled

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	functional	Partly fulfilled
II	Results from CARDS 2003 Regional available Activity data is available and its quality meets the requirements Software and hardware meets the requirement Skilful personnel available and enough personnel resources Stakeholders available and willing to cooperate	Fulfilled Partly fulfilled Partly fulfilled Partly fulfilled Partly fulfilled
III	Cooperation and outputs of CARDS 2004 Emission data, other activity data and AQ measurement data available and its quality meets requirements Dispersion model and GIS tools existing and meets requirements Enough personnel resources available Enough resources for producing and distributing promotion materials	Fulfilled – CARDS2004 finished Partly fulfilled Partly fulfilled Fulfilled; new BC experts nominated to the component Not yet current issue
IV	Skilful personnel available	Partly fulfilled, - new staff do not have experience on the PAH analysis, but trained in Finland during the study tour in May, or emission measurements,

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		the use of static injection method (for calibration of the analysers on monitoring stations) started in April 2007
	Hardware and Software requirements met	Not fulfilled
	Enough resources for new spare parts and/or equipments	Partly fulfilled, no new spare parts procured in year 2007 in the MEPP
	New detector and a sample injection system for GC procured in the Environmental Laboratory	Partly fulfilled (no need for a new detector)
	New equipments and spare parts for mobile emission laboratory procured	Not fulfilled, specification given in the tender announcement published by the EAR
V	BC human resources and computer meets requirements	Fulfilled
	Resources for model procurement available	Fulfilled – the models of the FMI given free of charge
	Co-operation with HMA	Partly fulfilled
	GIS, emission and meteorological data available	Partly fulfilled – meteorology data already available for

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		Skopje area

Project assumptions and the status of their fulfilment are:

I COMPONENT – Guidelines and Secondary Legislation

- The availability of BC experts has been adequate for this Component 1, after the rehiring of personnel to the MEIC in December 2006. There are however fears about the expert resources, as key people suffer from an overload of work, and some are changed due to maternity leaves. Nevertheless the key personnel have a good previous experience of preparing sublaws for air so the task is not a big challenge for them. Furthermore the contracts of some experts, being well trained and experienced during the course of the project, are due to expire at the end of 2007.
- Cooperation with and outputs of Cards 2004 and Cards 2005 projects. Contacts were established during the previous mission, and resulted in good cooperation and sharing of tasks, concerning the production of Tables of Concordance for several Directives. Also the Cards 2004 produced a first version of the Rulebook on Zones and Agglomerations, and as it was only being reviewed by MEIC staff, further Twinning Project input into it is due during a future mission.
- On the second week of the Mission it was approached with short notice to sit in on a meeting discussing Emission Limit Values, proposed by Cards 2004. The MS experts promised to comment on them and their application in the BC system of regulations, especially in relation to Plans and Programs during the mission in March.
- Translation of legislation and documents has been fully adequate for Component 1 needs. The only slight problem was that no translation to English was available of the before mentioned draft Rulebook on Zones and Agglomerations (because the final draft version was not finished by CARDS 2004 project in the period of the mission), as it would have helped to form the overall picture of the Rulebooks.
- Cooperation with the relevant stakeholders has been functional, especially with the MEPP personnel. Key persons from RIHP and HMA

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did not participate in all meetings during the mission, which is understandable because of its technical nature. It is to be ensured that these institutions and other stakeholders from industry and municipalities are involved into the continued drafting process of the Law and the Rulebooks.

II COMPONENT – Emission Inventories

No mission during the reporting period.

III COMPONENT – Preliminary Air Quality Assessment

- Cooperation and outputs of CARDS 2004 (concerning the component 3)
  - Fulfilled. Cooperation has been established with CARDS 2004 (component M3-Preliminary assessment and implementation of zones and agglomerations) project and it has been good. Results, outputs, data and reports of CARDS 2004 project are finalized and have been delivered to the Twinning project. Future processing of different data sets requires still some work.
- Emission data, other activity data and AQ measurement data available and its quality meets requirements
  - Partly fulfilled. AQ measurement data (CARDS 2004 and AQ measurement data 2006) and population density data on municipality level in text format available. Emission data from CARDS 2004 (Component M3) available but not the latest emission data nor all of the output of the component 2 (if there is money available in the MEPP for additional measurements and new data) is available. To improve the preliminary assessment it is desirable to have emission data at least on municipal level and preferably even with better resolution like 1 km x 1 km (total emissions and classified into major emission categories, like traffic, energy, industry, residential heating, etc.). For dispersion modelling even more detailed emission data is needed (biggest stationary sources and major roads separately, even better areal resolution, time variation of emission, stack parameters of stationary sources). Other activity data could be used to supplement possible inadequate emission.data, like population data (statistical zones,

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municipal level, 1 km x 1 km resolution), traffic fleet figures for major roads and on municipal level, fuel consumption figures on municipal level. Quality of the AQ measurement is so far not sufficient because the manual data validation process causes non-valid data not to be excluded. When data has been cleaned, the data fulfil the requirements of the preliminary assessment. The time coverage of data is quite poor.

- Dispersion model and GIS tools existing and meets requirements
  - Partly fulfilled at the moment. GIS tool MapInfo is use in BC and it meets the requirements but more training of BC personnel is need in use of software. Dispersion models for stationary sources (UDM-FMI) and mobile sources (CAR-FMI) are installed but not yet in active use because the training is still going on in component 5. No practical dispersion modelling result available yet for preliminary assessment.
- Enough personnel resources available
  - Fulfilled at the moment. Change in the BC leader for component 3 has taken place because. The former BC component leader Aneta Svefanovska left for maternity leave on 8th of March. Mrs Marijonka Vilarova is the new BC component leader. Marijonka Vilarova has enough expertise to act as the leader of the component 3 because she was e.g. the leading person in CARDS 2004 project, M3 component.
  - The BC expert Arminda Rushidi is nominated to this component. The BC expert Margareta Cvetkovska will also be partly involved in the activities of the component 3.

IV COMPONENT – Air Quality Measurements and Laboratory Work

Monitoring stations

- Skilful personnel available
  - Totally fulfilled during the mission. BC personnel available and working during the mission were very skilful, they were dedicated to work and worked really hard to achieve best possible results. The cooperation between MS and BC experts were extremely good.

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- Hardware and Software requirements met
  - Not yet fulfilled. New calibration equipments and software for data management is under tendering process in EAR.
- Enough resources for new spare parts and/or equipments
  - Not totally fulfilled. Some of the needed equipments are included in the hardware/software tender and some of the spare parts in the procurement list to be financed by MEPP annual budget. Both are still waiting for final approval. The finance situation in MEPP at the beginning of 2007 has been extremely bad because all of the decisions are delayed because of the change of minister. Most vital spare parts for AQ monitors at the moment are: membranes for pumps, spare external pumps for monitors, electronical cards for monitors and transfer boxes for monitors.

Calibration laboratory (reference laboratory)

- Skilful personnel available
  - Partly fulfilled. The static injection method is a primary method for preparation of the gas mixtures for calibration purpose. The reference laboratory is equipped with the SIM but also with the gas dilution device which has been used in routine calibration. The method is based on the use of gas standard of known concentration diluted with the known gas flow. The mass flow controllers is used for the obtaining the flow from the gas standard and the flow of the dilution gas. The dilution gas is obtained from the zero air generator which has scrubbers for removing impurities from the laboratory air. The use of static injection method was new to the TS of the laboratory and therefore the experience was not very strong. However the personnal is very capable to achieve a good level of practice for operation of the method. The TS needs to practice the use of the static injection method continuously.
- Enough resources for new spare parts and/or equipments
  - Partly fulfilled. There is a lack of equipments to establish the traceability chain from the reference laboratory to the measurement station (e.g. field calibrator, ozone calibrator, devices to obtain span and zero checks at the stations in Skopje). In addition there is also

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a lack of equipments and reference standards that are needed to realize the traceability of the calibration method at the reference laboratory to the SI unit (high quality gas standards, temperature and pressure standards, flow measurement device). These two points are solved after the investment package has been conducted. The number of the spare parts in the reference laboratory for the analyzers is substantial, but fit for the purpose with respect to the experience of the most frequently needed spare parts in the BC. However the possibility to purchase spare parts right after the malfunctioning of the analyzer occur is difficult due to the existence of the supplier and the lack of consumable funds.

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2B - ACHIEVEMENT OF MANDATORY RESULTS

All the benchmarks which were achieved from the start of the project has been listed and indicated which of the mandatory results are completed or close to completion. Those which were achieved in the reporting period are written by italicization.

Mandatory Results

I COMPONENT – Guidelines and Secondary Legislation

1. *The EU air quality legislation based on the already harmonized air quality directive further aligned*
    - *GAP analysis – close to completion, further development in October 2007*
    - *Table of Concordance - completed*

2. *A Draft sub legislations on Air Quality completed*
    - *Draft Sub legislation existing – close to completion, further development in June and October*
        - *A Rulebook on Monitoring and Reporting produced and delivered in a draft approved form to the MEPP.*
        - *A Rulebook on Plans and Programs produced and delivered in a draft approved form to the MEPP.*
        - *Furthermore some additional results and benchmarks, based on the previous mission in November 2006 and requests from the BC representatives during this mission, were achieved:*
            1. *Proposal for changes to the Law on Ambient Air Quality, based on TOC:s for Daughter Directives (DD), as the Law has to be revised within April 2007*
            2. *Air Quality Daughter Directive 4 Transposition (heavy metals and PAH)*
            3. *Consideration of new CAFÉ Air Quality Directive implications to regulations*
            4. *Commenting on Cards 2004 proposals for Emission Limit Values*
            5. *Revision of and amendments to the Rulebook on criteria, methods and procedures for the assessment of ambient air quality according to the FWD and the 4 DDs.*

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II COMPONENT – Emission Inventories

1. Institutional capacity and tools improved for maintaining emission data inventories and improved tools
    - Capacity of personnel and tools improved – close to completion.
        - An inventory was carried out over the existing material and current expertise in air emission inventories in the BC.
        - Two rough alternative proposals for the organization of National Systems for air emission inventories in the BC were drafted.

2. Report on compliance with EU based national emission system and priority list for improvement
    - Priority list – started.
        - A list of reporting obligations for the BC as well as reports already submitted by the BC to the international conventions was made. The international and local material collected from various sources was given to the BC Expert.

No mission is reported in the reporting period (see 2C. ACTIVITIES IN THE REPORTING PERIOD).

III COMPONENT – Preliminary Air Quality Assessment

None of the benchmarks or mandatory results has been fully achieved at the moment.
The work has been started by analysing the CARDS 2004-M3 Component outputs and to make improvement plan for preliminary assessment. Thus work to achieve following mandatory results is started:

1. *Improvement of methodology for preliminary assessment*
    - *Improved preliminary air quality assessment – close to completion.*
        - *Improvement plan made. It shall be revised and make more concrete when the work continues and the outputs from other components of Twinning project is realised (mainly from component 2 and 5). More detailed emission data (better areal and time resolution for different source categories) would be desirable to improve the assessment. Plan of the additional measurements and dispersion modelling made and reported.*
        - *During the mission of MS expert Birgitta Alaviippola (3.1.2.) the practical work concerning the improvement of methodology*

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started. Training to use GIS tools and perform basic data analysis was given by MS expert Birgitta Alaviippola. Report examples of preliminary assessments were presented and the outlook of the preliminary assessment report was discussed.

2. *Revised agglomerations and non-agglomeration zones established with CARDS 2004 project*
   - *Zone and agglomeration definition ready – close to completion.*
     - *Proposal of CARDS 2004 project analysed and commented. Proposed zoning is well defined and justified. Further consideration has to be made weather it would be reasonable to combine zones into bigger zone for some of the pollutants (for example SO2 limit value for the protection of ecosystems, NOx limit value for the protection of vegetation). GIS presentation of zones needs improvement and air quality assessment requirements within zones has to be revised according to the finalised preliminary assessment. It might be reasonable to aggregate zones to bigger ones to optimise the needed number of fixed measurement stations. Final decision should be after the preliminary assessment is concluded.*

IV COMPONENT – Air Quality Measurements and Laboratory Work

1. *Operation of the calibration laboratory improved and the staff is trained*
   - *Operation of the laboratory improved – partly completed*
     - *A clear progress on the operation of the NRL for preparation of gas mixtures for calibration purposes was achieved. The TS is capable for preparing the gas mixtures individually and repeatable results have already reached. However more exercise is needed. It was agreed that the TS sends the data for performing the gas mixtures by static injection methods for CO-, NO-, and for SO2 gases and comparisons to the dilution method.*

2. *Capacity built for operation, maintenance, calibration and repairs of air quality monitoring stations and samplers*
   - *Capacity of people improved – partly completed.*

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- *Practical hands on training were given by MS expert Kaj Lindgren. Training concentrated on the working practices on field (checking, adjustment and repairing instruments and maintenance practices), in laboratory (identifying the causes for failures, repairing and maintaining instruments and operation principles of instruments) and in data centre (checking the data, i.o. zero/span check and assessment of the status of monitors and identifying the possible failures based on the data)*
- *Work to achieve the mandatory result will continue in the next MS missions: 4.2.2 Implement and assist in preparation of SOP for maintenance and calibration of monitors and 4.3.3. Maintenance of BTX monitors.*
- *Hands on training on maintenance, calibration and field operation will be given also during the Study Tour to Finland in August 2007 (activity 4.1.3.).*
- *The MS-expert will analyze the calibration results and give an estimate for the uncertainty of the SIM. The procedure to calculate the calibration results and how to correct the output of the GDM with the MS-Excel programme was shown. The BC experts will solve the problem of the formation of the NO2 components with the dynamic dilutions systems and sends the solutions to MS expert Jari Walden. Consultation with the German expert Mr Joachim Seewoester, who works in a project in the Ministry of Environment, is needed. The problem was discovered during the mission and was partly solved by flushing the span gas during the calibration. More evidence is, however needed to solve the problem.*

4. Plan for improvement and training for data management has been completed
   - Improvement plan – close to completion
   - Staff trained - started
5. *Plan for improvement and training for GCs analysis for air samples has been completed*
   - Improvement plan – completed
   - *Staff trained – partly completed*
6. The operation of a Mobile Emission Laboratory is improved and the staff received proper training for emissions measurements
   - Operation improved – started

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- Staff trained – not done

7. *Specifications and priority list for investment (software, laboratory equipment and additional equipment for air quality monitoring stations and mobile emission laboratory)*
    - *Specifications and priority list – completed*

V COMPONENT – Dispersion Modelling

1. *An air quality model has been supplied and implemented*
    - *Operational model for dispersion calculation procedured and implemented at the MEIC - completed.*
        - *Two Air Quality models (UDM-FMI, CAR-FMI) have been installed. During this mission a new version of CAR-FMI including the BC Country's coordinate system was installed.*
        - *For the dispersion model UDM-FMI, a new Windows (VBS) interface for operating the model was coded and tested. Also a script for generating the calculation grids for UDM-FMI was created and tested.*
        - *An air quality model has been supplied and implemented. MS Expert provided a list of the necessary meteorological data that the Ministry asked officially to get from the Hydro Meteorological Administration as a part of an official co-operation between the Ministry and the Meteorological Institute for utilizing the installed dispersion models. The negotiation between the Ministry and Hydro Meteorological Administration about the issue continues.*
2. *Methods to provide meteorological and emission dataset for dispersion modelling has been established*
    - *3 years meteorological input data for Skopje region for both installed dispersion models (CAR-FMI and UDM-FMI) was provided for the MEPP. This will allow practical dispersion calculations even before the data from the local meteorological institute (HMA) is available in suitable format. The data requirements for real case calculations and the procedures to provide the emission data for the models were carefully documented.*
    - *Meteorological and emission dataset available* – close to completion
        - *The needed data and possibilities to get it on concrete level have been investigated. Discussion of the availability of data will continue.*
        - *Programs of the meteorological pre-processor have been implemented and the first meteorological datasets have been compiled based on the available meteorological data*
3. *The staff is trained in use and validation of the model results*
    - *Staff trained – close to completion, also course material partly*

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developed

- *3 days was spent in ensuring that the BC experts are capable in practical use of the installed models. Also a demonstration on the visualisation of the model results by MapInfo was given. As soon as the real emission data is available the BC experts are able to do the model calculations independently. The training in the validation of model results was decided to be postponed until some real-case studies with real emission data is available later in 2007*

4. Real case studies prepared
   - *Real case study – not started*
     - *Most of required input data (e.g. meteorology, GIS-information) is already available for real-case model studies – and also the procedure in feeding in all the relevant data for the models is already documented and practiced with the local staff.*
     - *A preliminary assessment on the availability of relevant emission data was made. For static sources there is already quite on extensive coverage of emission data available but unfortunately it is almost ten years old. (.e.g. "The Study on Air Pollution Monitoring System in the Former Republic of Macedonia , Final Report , Data Book, June 1999, Japan Environment Assessment Centre, CO. LTD., Tokyo ", provided by the BC Expert Marijonka Vilarova) . So it is expected that reasonable emission data for practical dispersion studies can be prepared during 2007.*

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2C. ACTIVITIES IN THE REPORTING PERIOD

A co-operation between the Twinning project and the CARDS 2004 and CARDS 2005 project has had a minor role compared to the previous reporting period. Both projects will end in summer 2007.

A third steering committee was held 23 March 2007 in the Ministry of Environment and Physical Planning. The following participants were involved in the steering committee:

1. Svetlana Gjorgjeva, BC PL, MEPP
2. Gordana Kozuharova, MEPP
3. Aleksandra N. Krsteska, RTA Counterpart (since 9.3.2007) and Leader of Component 3
4. Harri Pietarila, MS, PL, Finnish Meteorological Institute (FMI)
5. Tiina Harju, RTA, FMI
6. Dimitar Malinovski, EAR
7. Ivan Borisavljevic, EAR
8. Liljana Todorova Talevska, Hydro-Meteorological Administration (HMA)
9. Mihail Kocubovski, Republic Institute for Health Protection (RIHP)
10. Jane Sapardanovski, Ministry of Economy
11. Ruzica Andronikova, European Commission replaced Dejan Gjorsoski
12. Martina Toceva, RTA Assistant

13. Dejan, Panovski, State Secretary, MEPP, absent
14. Mate Gjorgievski, Secretariat for European Affairs (SEA), absent

Activities during short-term experts' missions in the reporting period:

I COMPONENT – Guidelines and Secondary Legislation

MS Leader for Component 1 Alec Estlander and MS expert Mika Seppala from 20th March to 30th March 2007, MS expert Wolfgang Spangl from 22nd March to 30th March 2007 and MS expert Lorenz Moosmann from 22th March to 26th March 2007

- Activity 1.2.1 Drafting of the sub legislation of Monitoring and Reporting for ambient air quality under the Framework Air Quality Directive and the Daughter Directives, 7 working days MS expert Spangl + 3 working days MS expert Moosmann
- Activity 1.2.2 Drafting of the sub legislation – 2004/224/EC and 96/62/EC regarding National Plans and Programs, 2 x 5 working days MS experts Alec Estlander and Mika Seppala
- In addition the following extra tasks were either proposed already as a

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result of the first mission in November, or agreed at the Kick-off meeting or later on during the mission, on the request of the BC representatives:

1. Proposal for changes to the Law on Ambient Air Quality, based on TOC:s for Daughter Directives, as the Law has to be revised within April 2007
2. Air Quality Daughter Directive 4 Transposition (heavy metals and PAH)
3. Consideration of new CAFÉ Air Quality Directive implications to regulations
4. Commenting on Cards 2004 proposals for Emission Limit Values
5. Revision of and amendments to the Rulebook on criteria, methods and procedures for the assessment of ambient air quality according to the FWD and the 4 DDs.

Marijonka Vilarova, Alexandra Krestska and Arminda Rushiti from the MEIC in the MEPP, Tanja Paunovska and Biljana Stavrevska from SRS from MEPP were involved in the activities.
Many meetings between the BC and MS experts were held concerning these activities during the missions. BC expert Mihail Kocupovski from the RIHP took part in a couple of meetings and BC expert Liljana Todorova Talevska from the HMA took part in the final meeting of the missions.

II COMPONENT – Emission Inventories

No mission is reported in the reporting period.

BC Expert Santtu Mattila's mission from 28 May to 1 June 2007 will be reported in the next quarterly report due to the mission days are split to two different reporting periods (another from March to May and other from June to August). It is accepted by the EAR.

Discussion concerning emission inventory on a field of transport has been continuing between MS expert Kari Makela, BC expert Marijonka Vilarova, BC expert Igor Paunovski and RTA Tiina Harju.

III COMPONENT - Preliminary Air Quality Assessment

MS expert Birgitta Alaviippola from 6th March to 9th March 2007

- 3.1.2 Improvement of methodology for preliminary assessment taking into account CARDS 2004 Project´s output, 4 working days Aleksandra N. Krsteska, Ljupco Grozdanovski, Arminda Rushiti and

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Marijonka Vilarova and partly also Aneta Stefanovska from MEPP were involved in the activity.

MS expert Harri Pietarila 20th March 2007

- 3.1.1 Analysis and review the outputs of CARDS 2004 project, 1 working day
  Three BC expert from MEPP participated in the work: Svetlana Gjorgjeva, Aleksandra N. Krsteska and Marijonka Vilarova.

PL Harri Pietarila and RTA Tiina Harju had several meetings to evaluate the project with BC component leaders and BC staff of all components to make optional decisions to manager the project. Because there were four MS experts from the component 1 in the BC at the same time the evaluation of the current situation and future plan for the component 1 was carried out during MS experts' missions. The summary from the evaluation of the project:

- Component 1
  - MS project leader participated some of the project meetings, the RTA participated in almost all meetings
  - Current state of the component 1 and future plans are reported in Alec Estlander's mission report March 30, 2007.
- Component 2 (Marijonka Vilarova, Aleksandra N. Krsteska, Tiina Harju and Harri Pietarila)
  - The progress and problems in the component 2 were discussed widely
  - One BC expert is in COPERT training at the moment.
  - Because of the lack of detailed activity and other information needed for emission inventory the highest levels of emission inventory can not be reached during the Twinning project. Improvement of inventory can only be achieved on the level 2 and within the timetable human and financial resources available for the work makes it possible. It was agreed to develop the system as much as possible taking into account resources and information available at BC side.
  - It was agreed to make a concrete step by step development plan for future years to achieve the higher level of emission inventory
  - There is a plan to finance improvement of IT base of Air Cadastre and Corinair reporting system. The tendering process takes about 2 months and choosing about 2 weeks so the outputs of this project are operational at the earliest at the end of Twinning project
  - It was decided to postpone MS experts Kristiina Saarinen's and Kari Makela's missions in order to have enough time to collect needed data

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- Component 3 (Marijonka Vilarova, Aleksandra N. Krsteska, Tiina Harju and Harri Pietarila)
  - Basic ideas to improve the methodology of preliminary assessment was discussed
  - All of the available measurement data shall be processed and included in the assessment. Interpolation methods can be used to illustrate the variation of concentration levels.
  - Also as detailed as possible areal emission information is going to be included in the assessment (existing data from the CADASTRE and outputs from component 2 if there is money available in the MEPP for additional measurements and new data). At least the emission data on municipal level for different source categories (traffic, industry, energy, residential heating) is needed in the assessment. Even more detailed information is desirable (for example major roads, biggest point sources and emissions with 1 km x 1 km resolution). At least five year emission data should be available
  - Dispersion modeling results are to be included in the assessment. It was agreed that dispersion modeling will be conducted in Skopje area for traffic, stationary and wood burning emissions (component 5). Detailed emission information is needed for modeling. The uncertainty of result depends directly on accuracy and coverage of emission input data. Also background concentration and other data is needed for modeling.
  - Additional indicative measurements could be used to support the preliminary assessment if there is enough financial resources available. BC experts have made draft plan for additional measurements to support the assessment. This plan shall be commented and revised by MS experts. Passive sampling for SO2 and NOx might be conducted in different measurement points to get better information about the concentration levels and its areal variation.
  - It was mentioned on the steering committee a possibility to make a plan for measurements with mobile station for future years during the Twinning project. The BC experts during the mission explain that probably the city of Kavadarci will keep the station as a stationary station..
- Component 4 (Igor Atanasov, Ljupco Grozdanovski, Tiina Harju and Harri Pietarila):
  - Urgent need to repair BTEX analysers was identified. It was decided to include one extra mission for training of maintenance of BTEX analyser in the project. During the mission of the MS expert Jari Walden it was recognized that all BTEX analysers of

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the BC are out of order. It is necessary to send at least one of them to the manufacturer for repairing before the mission concencerning a training on BTEX analysers given by the MS expert Pirjo Kuronen..

- Kaj Lindgren's mission was successful but there is still need for more practical training on maintenance of monitors. It was decided to include at least two days hands on training for BC technical staff during study tour to Finland on August: One day for maintenance of electronic issues, one day for field calibration and maintenance of samplers at FMI's background station Virolahti. Also QA/QC training will be organized at the FMI's Reference Laboratory during study tour.
- The investment tender procedure is urgent issue and major part of the rest activities of the component are depending on it
- It was noted that Johannes' mission is postponed because the tendering process is delayed
- It was decided that Tiina could give some emission measurement training in summer if there is people to be trained and equipments available
- Other missions can be continued as planned.

o Component 5 (Driton Idrizi, Igor Paunovski, Tiina Harju and Harri Pietarila)

- Two models are implemented : CAR-FMI and UDM-FMI
- The script on running UDM-FMI has been made and usable
- The meteorological data sets for Skopje has been provided and processed. Modelling in Skopje area is possible after emission data is available and processed.
- Meteorological pre-prosessor MPP-FMI has been implemented, but there is need for developing user friendly script to run it
- Draft manuals has been developed and relevant training given in using models
- Co-operation between MS and BC experts has been good
- Major problem in future work is the co-operation with HMA to get relevant meteorological data from other parts of the country.
- The future mission can be carried out as planned and the work will continue on making real case dispersion modelling in Skopje area.

BC Expert Birgitta Alaviippola's mission from 28 May to 1 June 2007 will be reported in the next quarterly report due to the mission days are split to two different reporting periods (another from March to May and other from June to August). It is accepted by the EAR.

IV COMPONENT – Air Quality Measurements and Laboratory Work

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MS Expert Kaj Lindgren 12 March to 16 March 2007

- Activity No. 4.2.1. Training technical staff on repair maintenance, 5 working days
  The training was done in the data centre, monitoring stations and calibration (reference) laboratory. Igor Atanasov and Ljupco Grozdanovski from the MEPP were involved in the activity. German expert Joachim Seewoester was also involved in the kick-off meeting and the final meeting. He works in the CIM project in the MEPP.

MS Expert Jari Walden 23 April to 27 April 2007

- Activity 4.1.4 Training technical staff on calibration of instruments, 2 working days
  BC experts Igor Atanasov and Ljupco Grozdanovski from the MEPP were involved in the activity.
- Activity 4.1.5. Calibrate and check instruments in cooperation with technical staff, 3 working days
  Igor Atanasov and Ljupco Grozdanovski from the MEPP were involved in the activity.

MS Experts and the RTA together with the BC experts from October 2006 to April 2007

- Activity No. 4.7.1 Preparation a draft specification and priority list of investments (software, laboratory equipment and additional equipment for air quality monitoring stations and mobile emission laboratory). The list was prepared with the consultation of MS for items 4.1.1, 4.1.2, 4.4.1, 4.4.2, 4.4.3, 4.5.1, 4.5.2 and 4.6.1.

The tender announcement “Supply for Equipment and Consumables for the MEPP” in three lots 1. Environmental Laboratory and Air Quality Equipment and Consumables, Lot 2. Environmental Laboratory and Equipment, Lot 3. Air Quality Monitoring Equipment was published on the website of the EAR and a local newspaper at the end of April 2007. The deadline for tenders was 28 May 2007. The result of the tender evaluation is not yet known.

Study tour in the Finnish Meteorological Institute from 7 May to 11 May 2007.

1. Activity 4.5.3. Arrange and perform training courses for staff concerning standards operation procedures of target compounds for GC analysis for air samples (include staff from HMA and RIHP Institute of Chemistry Institute of Chemistry from the university and other stakeholders in training courses), 5 working days
   BC experts Aleksandra Nestorovska Krsteska (Junior Associate), Margareta Cvetkovska (Junior Associate) and Suat Ibishi (Junior Associate) from the MEIC in the MEPP, Vesna Kostic (Head of Food

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Department) from RIHP and Mirko Cvetkovski (Associate) from the HMA and partly RTA Tiina Harju.

The objective of the study tour to Finland was to give training course for staff concerning standard operation procedures of target compounds for GC analysis for air samples. The programme of the study tour is in an annex. The detailed discription about the study tour and the program of the RTA during the study tour (meetings etc) is also in annecis.

V COMPONENT – Dispersion modelling

Ari Karppinen from 12.3.2007 to 16.3.2007

- Activity No. 5.1.1. Specification and procurement of an appropriate system for AQ modelling, 1 working days
  BC Leader of Component 5 Igor Paunovski, BC Expert Driton Idrizi, BC Expert Margareta Cvetkovska from the MEIC in the MEPP
- Activity 5.3.1. Training course on dispersion modeling and Demonstrate methods for validation of AQ models and for scenario making,.2 working days
  BC Leader of Component 5 Igor Paunovski, BC Expert Driton Idrizi, BC Expert Margareta Cvetkovska from the MEIC in the MEPP
- Activity 5.3.2: Develop course materials, 2 working days
  BC Leader of Component 5 Igor Paunovski, BC Expert Driton Idrizi, BC Expert Margareta Cvetkovska

Kick-off meeting at the MEPP:

PARTICIPANTS: MS Expert Ari Karppinen, BC PL Svetlana Gjorgjeva, RTA Counterpart Aleksandra N. Krsteska, BC Leader of Component 5 Igor Paunovski, BC Expert Driton Idrizi, BC Expert Margareta Cvetkovska, RTA Tiina Harju, RTA Assistant Martina Toceva

DECISIONS: the main goals for the visit were decided to be:

- practical training of the BC experts in the use of 2 installed models
- simple windows interface for the UDM-FMI to ease up the practical use of the model was hoped for
- preparing a detailed documentation for the UDM-FMI model

FINAL Mission Meeting at the MEPP

PARTICIPANTS: MS Expert Ari Karppinen, RTA Counterpart Aleksandra N. Krsteska, BC Leader of Component 5 Igor Paunovski, BC Expert Driton Idrizi, RTA Tiina Harju, RTA Assistant Martina Toceva

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DECISIONS: the main goals for the visit were found to be fulfilled. It was agreed that for Ari Karppinene's last MS Expert visit the main issue will be the evaluation of practical model results.

During the MS experts Risto Varjoranta' mission from 19th to 23rd February 2007 in the meeting in the HMA the representatives of the HMA told that observation data is recorded only manually on paper documents. To get the needed data for dispersion modelling on electronic form will need a lot of time consuming human work and it is outside the routine tasks of the HMA. The HMA gave a cost estimate for one year data in one station. After the mission the MEPP and the HMA has started the negotiation to make an agreement changing/receiving data without paying. The negotiation is still in progress. The Ministry of Environment has sent letters signed by the State Secretary Dejan Panovski and the Ministry of Environment and Physical Planning Dzelil Bairami requesting meteorological data in electronic form from the HMA. The HMA has not given any response to those letters. The letters has set and resent during the period from February to May.

Meanwhile the meteorological data has tried to receive/find from another source in the BC country. Therefore the BC experts Marijonka Vilarova, Igor Paunovski, Driton Idrizi and the RTA Tiina Harju had a meeting with the Director of MET/AIS, the Director of Technical Department Vladko Krstevski and two experts from the Civil Aviation Administration, which is under the Ministry of Transport and Communications, in their office in the airport of Skopje 12 April 2007. They were willing to co-operate but unfortunately their data was not on the useable form in the Twinning project due to a closed data management system (high security). Due to a same reason latest data was from year 2004 or even year 2005, two three years old. Recoding of the data would mean a lot of extra work done by the meteorologist. There is no meteorologist in the MEPP. Therefore an MS expert should do this work and therefore in the future (year after year) this kind of data would not be possible to use in a dispersion modelling in the MEPP. In addition, the data was only available from surrounding of the airport of Skopje.

The BC experts' study tour report and the MS experts' mission reports are in appendices of this report.

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2D. TIMING AND DELAYS

Adherence to time schedule

The time schedule for the activities taken form the working plan is shown in a following table. All the activities which have planned and taken place from the start of the reporting period until the end of the reporting period are marked with a cross and pink colour in the relevant box. The activities which have taken place but planned in another time are marked with a cross. In general the crosses shows the time of the MS Expert's missions. Actually the activities have been done before and after the missions in the BC. There is one activity (no. 5.1.1) which has been continued in the reporting period but already started and planned to do in the first and second reporting periods. A postponement of an activity no. 4.6.3. Training course (part 1) on emission measurements; basic principles has been done by side letter from April 2007 to December 2007 (side letter no. 2, 19th January 2007).

There is no delayed more than three months.

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Table 2. A time schedule in the reporting period.

CARDS Twinning Project Air Quality Improvement

Reporting

Reports

	March, Year 2007					April, Year 2007					May, Year 2007				
	VI					VII					IX				
I COMPONENT - GUIDELINES AND SECONDARY LEGISLATION															
1.1.1 Review current secondary legislation, and preparation of Table of concordance for…															
1.1.2. Analysis of the needed sub legislation for further implementation of first, second and fourth…															
1.2.1. Drafting the sub legislation of monitoring and reporting for ambient air quality under the FW	x	x	x	x	x										
1.2.2. Drafting of sub legislation - 2004/224/EC and 96/62/EC…	x	x	x	x	x										
1.2.3. Drafted Guidelines on establishing agglomeration and non-agglomeration zones															
1.3.1. Draft instructors to assist the application of secondary legislation - …															
1.3.2. Capacity building of stakeholders to use Manual															
II COMPONENT - EMISSION INVENTORIES															
2.1.1 Identify and appoint stakeholders															
2.1.2. Support to construct the database and its content for prepartion of the reports…															
2.2.1. Identify data gaps for compliance with EU-based national air emission system…															
2.2.2. Preparing a Draft list of priorities for recommended improvements															
2.3.1. Support to develop a National Emission Factors and inventory methods															
2.3.2. Support to develop collection of activity data															
2.3.3. Support to update the National Methodology for air emissions inventories…															
2.4.1. Improve capacities to Develop comprehensive training program…															
2.5.1. Support to EPER reporting in general															
III COMPONENT - PRELIMINARY ENVIRONMENTAL ASSESSMENT															
3.1.1. Analyses and review the outcome of CARDS 2004 projects															
3.1.2. Improvement of methodology for preliminary assessment taking accoount…	x	x	x	x	x										
3.1.3. Integrate emission inventory data and dispersion modelling…															
3.2.1. Revision of agglomeration and non agglomeration zones															
3.3.1 Reporting and visualization of the assessment results															
3.4.1 Perform campaign to promote results for public															
IV COMPONENT - AIR QUALITY MEASUREMENTS AND LABORATORY WORK															
4.1.1. Review of the present situation at the calibration laboratory															
4.1.2 Preparing a Plan for improvement of calibration laboratory															
4.1.3. Sharing EU MS country's experience and training on air quality monitoring	Study Tour in Finland postponed to 8/2007														
4.1.4 Training technical staff on calibration of instruments						x	x	x	x	x					
4.1.5. Calibrate and check instruments in cooperation with technical staff						x	x	x	x	x					
4.2.1. Training technical staff on repair maintenance	x	x	x	x	x										
4.2.2. Implement and assist in the preparation of SOP for maintenance and…															
4.3.1. Developing draft QA/QC plan															
4.3.2. Training on QA/QC plan															
4.4.1. Review of present situation for data management system															
4.4.2. Identified needs for furthered development of the software															
4.4.3 Plan and specification for procurement of new data management software															
4.4.4. Training on validation, management, analysis and introducing methods for presentation…															
4.5.1. Review of present situation in Central Environmental Laboratory on GCs analysis…															
4.5.2. Preparing a plan for improvement of chemical laboratory…															
4.5.3. Arrange and perform training courses for staff concerning standard operation procedures…	GC Study Tour postponed to 5/2007										x	x	x	x	x
4.6.1. Check instruments of mobile emission laboratory and prepare plan for improvement…															
4.6.2. Check the results of improvements															
4.6.3. Training course (part 1) on emission measurements; basic principles						Mission postponed to 12/2007									
4.6.4. Training course (part 2) on emission measurements; advanced emission…															
4.7.1. Preparation a draft specification and priority list of investments…															
V COMPONENT - DISPERSION MODELLING															
5.1.1. Specification and procurement of an appropriate system for AQ modelling…	○	○	○	○	○										
5.2.1. Investigate available meteorological data from HMA and Skopje airport and…															
5.2.2. Preparation of emission and other input data for dispersion modelling															
5.3.1. Training course on dispersion modelling and demonstrate methods for ….	x	x	x	x	x										
5.3.2. Develop training course materials	x	x	x	x	x	Partly activity postponed to 6/2007									
5.4.1. Use of dispersion modelling for air quality assessment in couple of real cases															

Activities planned
x Activities planned and done
x Activities done
○ Activities started in time and now continued

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Recuperation of delays

A time schedule for the following reporting period (3 months) is shown in the next table. A study tour to Finland concerning a sharing of EU MS country's experience and training on air quality monitoring (activity number 4.1.3) has postponed from March to August 2007 (side letter no. 2, 19th January 2007).

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Table 3. A time schedule for the following reporting period (next three months).

CARDS Twinning Project Air Quality Improvement

Reporting

Reports

	June, Year 2007	July, Year 2007	August, Year 2007
	X	XI	XII
I COMPONENT - GUIDELINES AND SECONDARY LEGISLATION			
1.1.1 Review current secondary legislation, and preparation of Table of concordance for…			
1.1.2. Analysis of the needed sub legislation for further implementation of first, second and fourth…			
1.2.1. Drafting the sub legislation of monitoring and reporting for ambient air quality under the FWD…			
1.2.2. Drafting of sub legislation - 2004/224/EC and 96/62/EC…			
1.2.3. Drafted Guidelines on establishing agglomeration and non-agglomeration zones			
1.3.1. Draft instructors to assist the application of secondary legislation - …			
1.3.2. Capacity building of stakeholders to use Manual			
II COMPONENT - EMISSION INVENTORIES			
2.1.1 Identify and appoint stakeholders			
2.1.2. Support to construct the database and its content for prepartion of the reports…			
2.2.1. Identify data gaps for compliance with EU-based national air emission system…			
2.2.2. Preparing a Draft list of priorities for recommended improvements			
2.3.1. Support to develop a National Emission Factors and inventory methods			
2.3.2. Support to develop collection of activity data			
2.3.3. Support to update the National Methodology for air emissions inventories…			
2.4.1. Improve capacities to Develop comprehensive training program…			
2.5.1. Support to EPER reporting in general			
III COMPONENT - PRELIMINARY ENVIRONMENTAL ASSESSMENT			
3.1.1. Analyses and review the outcome of CARDS 2004 projects			
3.1.2. Improvement of methodology for preliminary assessment taking accoount…			
3.1.3. Integrate emission inventory data and dispersion modelling…			
3.2.1. Revision of agglomeration and non agglomeration zones			
3.3.1 Reporting and visualization of the assessment results			
3.4.1 Perform campaign to promote results for public			
IV COMPONENT - AIR QUALITY MEASUREMENTS AND LABORATORY WORK			
4.1.1. Review of the present situation at the calibration laboratory			
4.1.2 Preparing a Plan for improvement of calibration laboratory			
4.1.3. Sharing EU MS country's experience and training on air quality monitoring			Study Tour in Finland
4.1.4 Training technical staff on calibration of instruments			
4.1.5. Calibrate and check instruments in cooperation with technical staff			
4.2.1. Training technical staff on repair maintenance			
4.2.2. Implement and assist in the preparation of SOP for maintenance and…			
4.3.1. Developing draft QA/QC plan			
4.3.2. Training on QA/QC plan			
4.4.1. Review of present situation for data management system			
4.4.2. Identified needs for furthered development of the software			
4.4.3 Plan and specification for procurement of new data management software			
4.4.4. Training on validation, management, analysis and introducing methods for presentation…			
4.5.1. Review of present situation in Central Environmental Laboratory on GCs analysis…			
4.5.2. Preparing a plan for improvement of chemical laboratory…			
4.5.3. Arrange and perform training courses for staff concerning standard operation procedures…			
4.6.1. Check instruments of mobile emission laboratory and prepare plan for improvement…			
4.6.2. Check the results of improvements			
4.6.3. Training course (part 1) on emission measurements; basic principles			
4.6.4. Training course (part 2) on emission measurements; advanced emission…			
4.7.1. Preparation a draft specification and priority list of investments…			
V COMPONENT - DISPERSION MODELLING			
5.1.1. Specification and procurement of an appropriate system for AQ modelling…			
5.2.1. Investigate available meteorological data from HMA and Skopje airport and…			
5.2.2. Preparation of emission and other input data for dispersion modelling			
5.3.1. Training course on dispersion modelling and demonstrate methods for ….			
5.3.2. Develop training course materials			
5.4.1. Use of dispersion modelling for air quality assessment in couple of real cases			

Activities planned

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2E. ASSESSMENT Overall

Assessment of progress

Overall the progress achieved during the mission time was to be considered really good. The mandatory activities, being crucial for BC transposition of EU regulations, were both achieved during the mission. In addition, several other tasks, either important for the process, or otherwise helpful to the BC administration, were undertaken and results produced.

There are clear possibilities to improve the methodology of preliminary AQ assessment nevertheless it is challenging task because the amount and availability of needed data and human and financial resources is limited. There is need for additional measurements to have better picture on the air quality in different parts of the country. All of the needed data can not be provided during the Twinning project because the advisable minimum measurement time is one year.

A lot of practise will be needed by the BC staff to reach the required level of operation of the Static Injection Method as a primary measurement method. A good start to use the SIC is carried out with very intensive working hours and the target for the progress was achieved.

V COMPONENT

The modelling component has nearly achieved all the pre-defined goals. Models are installed on the local servers – and the BC staff has been trained to use them.
The last issue: practical model calculations with real data and the evaluation of the modelling results can be performed during the last scheduled missions of the MS experts Sari Lappi and Ari Karppinen.
The co-operation/changing of data between the MEPP and the HMA is crucial to get meteorological data on electronic form needed for dispersion modelling.

Issues

The former RTA Counterpart Aneta Stefanovska left for a maternity leave 8 March 2007. Aleksandra Nestorovska Krsteska is the new RTA Counterpart,

No problems with management or co-operation. The co-operation between MS and BC expert has been good.
There is still a lack of human resources to fulfil all responsibilities on air quality field. More human resources would be needed for emission inventory

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(Component 2).

I COMPONENT – Guidelines and Secondary Legislation

During the first week of the mission also the MS PL was present, which was very helpful for discussions in relation to the other components, especially component 3, and on other Project matters, like further planning of the component inputs, and the study tour to Finland in August 2007.
There were no problems in the management of the mission, as all tasks and the share of work were agreed in close cooperation between all parties, and all issues were discussed openly as a continuous process.
During the mission, and even beforehand, there were wishes and agreements to carry out additional tasks if time allows. Efforts were made to support these BC needs in every way, and to accommodate the wishes. These tasks were seen as support the BC efforts to achieve full transposition, and to tackle imminent air pollution problems.

III COMPONENT – Preliminary Air Quality Assessment

Co-operation with the BC experts worked well. The planned topics of the mission were changed partially because the person who has previous experience of the GIS tools left for maternity leave during the mission (8th of March). It was then agreed that during this mission the focus was the training of the new staff working for the project. The aim was that the new personnel will learn to visualize the measurement results in different ways. The major problem was that there were no prepared data tables for the training of MapInfo. The combination of different data sets (e.g. coordinates and concentrations) is complicated and a lot of hand work is required because the data from the measurement stations is not in the same order due to varying names of the stations. The change of the focus and other activities during the week (e.g. workshop) caused that all the planned work was not finalized and both MS and BC Experts need to make some effort to finalize the work between the missions.

The co-operation with CARDS 2004 and 2005 projects has been established and major part of the CARDS 2004 data and results has been delivered and analysed. The AQ measurement results from year 2006 will be integrated with the previous preliminary assessment in order to produce an improved air quality assessment together with the emission and modelling results. The improvement of the preliminary assessment is a challenging task because the amount and availability of needed data and human and financial resources are limited.

The timing and extent of additional measurement is depending on the

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available finance to support the assessment.

The future progress of preliminary assessment during twinning project depends on progress of other components in the project; mainly the progress of component 2 emission inventories and component 5 dispersion modelling since more detailed emission data and dispersion modelling is needed to further improve the assessment.

IV COMPONENT – Air Quality Measurements and Laboratory Work

It is found out that there is a need for training on BTEX analyser. It was decided to give one day training on maintenance of BTEX analyser during a study tour in Finland in August 2007. An extra mission is accepted by the side letter number 3 (23 March 2007) concerning Activity 4.2.3 Training technical staff on repair and maintenance for BTEX analyser. MS expert Pirjo Kuronen will give this training in autumn 2007 if one of the BTX analyser is repaired by then by the manufactory.

V COMPONENT – Dispersion Modelling

No problems in the management of the mission or in the co-operation the MS and BC expert. The co-operation between the MEPP and HMA on the concrete level were discussed during this visit. The discussion shall continue in the near future between the two institutes. As meteorological data will be needed for the dispersion modelling purposes quite regularly also in the future working co-operation and routines to transmit needed data should be established.

Recommendations

I COMPONENT – Guidelines and Secondary Legislation

The project should strive at influencing MEPP policies and activities so that the sustainability of the project is ensured. This means argumentation for the need to have key personnel employed on a permanent basis, so that not the personnel, that has been well trained and obtained fruitful international experience, is either sacked or will strive to find other jobs.
Further efforts should be made to tackle especially the uncontrolled combustion of waste and wood, and other sources of particulate air pollution (including possibly PAH and HM), which seems to be the most severe air pollution problem in the BC. Some of these issues, like car, heavy duty vehicle and bus exhausts, require good cooperation with other ministries.

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The structure of regulations, which now contain much unnecessary detail at the Law level, would benefit from reconsideration, where provisions of principal matter would stay in or be moved to Laws, whereas operational clauses could be moved to sub-regulations.
The MS experts strongly recommend to reduce the number of zones under consideration, to reduce monitoring requirements and costs, and give more flexibility..

The new CAFÉ Directive would merit a thorough analysis of all impacts of it on BC regulations, with proposals for required amendments and additions, which seems to require another mission. A new activity in October 2007 proposed in the side letter number 4 in May 2007 – already approved by the EAR.

II COMPONENT – Emission Inventories

Priorities for recommended improvements (Activity No. 2.2.2.)

Six major recommendations, explained in details below the list, are given below to enhance and improve the current work on air emission inventories in Macedonia:

1) Share information on national level
2) Merge inventories and improve cooperation between experts
3) Appoint designated experts, especially an IT expert → BC expert Igor Paunovski is nominated
4) Build a central database for all inventory work
5) Use key sources to prioritise development of the methodologies
6) Establish a Macedonian national system for the emission inventories

The activities will be continued in the next mission in spring 2007. The content of the missions might have to be revised according to BC resources for the work.

Emission Inventory – Transport

The discussion concerning emission inventory on transport has continued. The following things should be done by the next mission to be taken place in April 2007:

- Funding for the Copert model work should be resolved
- Organisation and person(s) involved for the use of Copert model and gathering of the information needed for it should be chosen
- Analysis of the vehicle data and gathering of other input data for the Copert model should be ongoing

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- Transport expert

III COMPONENT – Preliminary Air Quality Assessment

The review of preliminary assessment carried out by CARDS 2004 project and first recommendations to improve methodologies was given in first mission report of MS expert Harri Pietarila (7.2.2007). Below are listed some further recommendations for dispersion modelling and additional measurements to support the preliminary assessment during the twinning project. The recommendations mostly refer to the actions for the preliminary assessment in Component 3 and the use of the model within the Component. In the given text the recommendations are listed and they refer to Component 5.
The discussion corcerning the needed additional measurements between the MS Expert Harri Pietarila and the BC experts will continue during Harri Pietarila's next mission in June 2007. After it the more detailed recommendations will be given in Harri Pietarila's next mission report.

Dispersion modelling:

- Local scale dispersion modelling for SO2, NO2, CO and PM10 in Skopje area
  - At least emissions from largest point sources, traffic and wood burning should be included
  - Point sources: yearly emission data is available at the moment; additional information is needed about the time variation of emission
  - Wood burning: Yearly emission data available as area sources (500 m x 500 m)
  - Traffic sources: Traffic data from 7 major crossings is available. This can be used to estimate traffic emission of major roads. The validity of traffic data has to be checked (base year etc.). Also additional information is needed (estimation of total traffic emission in Skopje, time variation of traffic fleet, proportion of different car types, emission coefficients, etc.). Output from component 2 is needed to support traffic dispersion modelling.
- Dispersion modelling of major point sources for at least for SO_2 and lead in other regions
  - Representative meteorological data is needed to conduct this modelling
- It is not possible to make any regional dispersion modelling calculations to estimate the background concentration levels during the Twinning project. Thus it advisable to take into account the results of available model calculations in Europe (EMEP, SILAM etc.)

Additional measurement campaigns

- Draft plan prepared by BC experts was provided, the plan includes:

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- Indicative measurements at six different locations: Kriva Palanka, Stip/Kratovo, Strumica, Prilep, Berovo/Delcevo and Ohrid
- The measurement sites are chosen to give additional information in the Eastern part of the country which is not covered by monitoring network
- Random measurements distributed over the year is proposed, including altogether 1560 individual measurements

o Comments on the draft plan

- Proposed measurement sites (cities) are basically well situated. Four of them are situated in Eastern part of the country where is only one measuring station at the moment at Kocani. Prilep is the third largest city in the country (population appr. 70 000) and Ohrid is lively tourist region.
- The existing fixed measurement sites are located mainly in urban and industrial areas. Lazarapole is the only rural background station located in high altitude. Gazi Baba in Skopje is the only suburban background station.
- At the moment there is a lack of measurement data in different environments: urban background areas near residential areas, rural residential areas, traffic influenced areas outside cities (along motorways), rural background areas
- There is a lack of SO2 and NOx measurements outside the urban areas to estimate the concentration levels against SO2 limit value for the protection of ecosystems and NOx limit value for the protection of vegetation and respective assessment thresholds
- There is a lack of PM10 measurement data in the rural background areas
- There is a lack of O3 measurement data at different altitudes and environments
- There is very few or none data of benzene, HMs and PAH concentration
- The indicative additional measurement sites should be chosen so that they give good picture about the air quality in different environments; i.e. not only in different locations with same kind of environment

o Draft proposals for additional measurements

- Mobile station (located at the moment in Kavadarci) should be used also for the additional measurements. The mobile station should be moved to different site (with different environment) on yearly basis. Priority environments for measurements in the future years are: urban background, traffic hot spots, rural residential areas, residential areas with intensive wood burning, rural background in different parts of country. More detailed measurement plan for couple of next years should be made during twinning project.

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- Passive sampling measurements could be used for example for SO_2 and NO_x measurements. Measurements outside the urban areas i.e. rural background areas is needed to estimate the concentration levels against SO_2 limit value for the protection of ecosystems and NO_x limit value for the protection of vegetation and respective assessment thresholds. Monthly sampling time can be used for passive sampling on background areas.
- For benzene measurements it is advisable to use existing BTEX analysers. One BTEX analyser should be located at the mobile station. Also passive sampling can be used.
- It is advisable to slightly revise the proposed sites for additional measurements: decrease the number of different cities so that more different environments in one city can be included. There is also need to include at least one measurement site located at rural background area with at least SO2, NOx and PM10 measurements.

IV COMPONENT – Air Quality Measurements and Laboratory Work

Monitoring stations and calibration (reference) laboratory

1. To pack the analysers in the softly insulated boxes during transportation from the monitoring stations to the calibration laboratory and vice versa. The original packaging boxes of instruments can be used also for transportation if there is no possibility to buy more expensive special transport cases. To use protective boxes is vital importance to ensure that no damages are caused by vibration etc. during the transportation. It has to be noted that some of the roads are really in a bad condition in the BC.
2. There were no real individual values of span and zero available in the MEPP data centre computers. It would be necessary to see real span and zero values to check correct function and state of the analysers also in the data centre without going to the station. This enables in advance to identify possible failures in monitoring sites and to analyze possible reasons for it.
3. At the moment it is set a 10 min zero time and 25 min span time in zero/span check. If both zero and span times would be changed to 30 min it would be possible to get for both zero and span two true values as ten minutes average (first ten minutes after each change is needed for stabilization) and see them in 10 minutes display. This way it is possible also to read real zero and span values in the data centre.
4. It is recommended to use outside spare pumps in the analysers after the original pump has broken. Outside pumps are much cheaper to purchase and they are easier to maintain and repair.
5. Calibration is very important part of the whole measurement practises and reliability of data. Correct calibration procedure is time consuming process but it is worth while to put true efforts on it. At the moment calibration

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procedure is too fast and not following all needed steps. Between different calibration steps there is a need for enough time for stabilization. The instruments need also to swich ond and warm up well before the calibration procedure is started. Good practise is to switch on the instruments about one day before calibration.

6. The temperature measurements in PM-monitors should be checked and changed to follow the correct practises of manufacturer.
7. A lot of time is spent by BC technical staff because they have two working places at different parts of Skopje: at the MEPP data centre and at calibration laboratory (and also field work). Better and more effective organisation of technical staff work would be if their main working place is located in the laboratory. Data flow from stations should be made visibly also from laboratory to enable technical staff to carry out data check also from there.
8. One possibility might be to establish one responsible group for field work and calibration laboratory. The needed personal would be at least 3 persons: Group leader responsible also for quality management; one technical person with main responsibility in calibration laboratory and one technical person with main responsibility in field work. Both technical persons should work closely together, support each others work and substitute each others when ever needed. The more detailed recommendations for the organisation and needed staff will be given during the missions of Jari Walden.

Calibration laboratory (reference laboratory)

1. The use of the static injection methods can serve a primary measurement method to prepare gas mixtures for the calibration purposes with known accuracy (best calibration capability of 2 % as expanded uncertainty). To improve the present experience the preparation of gas mixtures needs to be repeated systematically on continuous basis.
2. The problematic of the characteristics of different gas compounds needs to be clarified by studying more details on the behaviour of the Static Injection System with different gas compounds (see in the presentations of the Workshop on Comparability of measurements of NO, CO, and SO2 at low ambient level (http://ies.jrc.cec.eu.int/553.html).
3. Cross checks of the SIM and GDM needs to be perform at regular time lags.
4. Gas Phase Titration methods needs to be conducted on regular basis to define the converter efficiency of the NOx-analyzers both at the laboratory and also for the site analyzers. The GPT needs to be done at least three time a year for the laboratory analyzers and at least once a year for the site analyzers and every time after change or repair of the converter.
5. Participation of the intercomparison exercise of the CO-, NO-NO2, SO2-, and O3 measurements organized by the EC/JRC/IES-Ispra.

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6. Responsibilities or consultancy for the BTEX analyzers should be expanded with the expertise of the chemical laboratory.
7. Calculation of the calibration results needs to be trained. The excel file, provided by the MS expert, to obtain the calibration corrections to the analyzers or to the methods, could be used.
8. The use of the log books in the laboratory for all the work and calibrations that are conducted in the laboratory should be systematic. All the information necessary to obtain the calibration results or to repeat the same experiments needs to be filled.
9. Preparation of the standard operation procedure (SOP) for Preparation of gas mixtures for calibration purpose, obtaining the calibrations (laboratory and on the field), obtaining the measurements on the field and laboratory, checking the measurement data, calculation of the results based on the calibrations, maintenance of the analyzers, calculation of the expanded uncertainty for the air quality measurements, and maintaining the traceability of the results.
10. Installation of the heater on the sampling tube of the FH-62IR (particulate monitor) and the temperature probe to measure the ambient temperature.

The TS of the NRL continues the training of the preparation of the gas mixtures by SIM and GDM. A SOP for performing the calibration in the laboratory and in the field should be prepared. The air quality standard prepared by European committee for standardization should be followed and the QA/QC procedures of the standards should be followed.

Training for the SIM needs to be continued in the BC and calculation of the results performed with the help of the MS expert. It is necessary that the BC experts perform cross checks between the SIM and the GDM and solve the problems associated with the presence of the NO_2 at the GDM system.

The state of the art at the reference laboratory and to strengthening of calibration capability of the laboratory will be checked during the mission of the MS expert at the beginning of September

Mobile Emission Laboratory

It would be important to have a responsible person for the mobile emission laboratory and emission measurement to be able to develop activities.

V COMPONENT – Dispersion Modelling

The modernization and automation of the observation network including the upper air soundings, data acquisition, easily accessible database system and

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the data quality control would be highly recommended to strengthen the capabilities of the HMA in the future.

The quality of meteorological data available from the air quality monitoring stations of the MEPP could be better if it would be possible to arrange the quality assurance including the maintenance and calibration of the equipment and the validation of the data on more regular bases.

In order to proceed to practical calculations utilizing real data, the only work remaining is the preparation of real emission data for model calculations. This calls especially contribution from the Component 2. Emission Inventories in the Twinning project.

- BC Expert are recommended to go through the model documentation and commenting on further refinements needed in the model manuals and model interfaces. After comments the MS expert Ari Karppinen will prepare the next, refined version of the model user guides.

- Some minor changes in the meteorological pre-processor are needed to make it easier to use it on computer platform used in the MEPP. It will be done by the MS experts as well some modifications needed in the statistical programs used in connection of the Urban Dispersion Model

- The BC experts are recommended to continue a collection of the emission data of the major point sources. Also traffic fleet data for dispersion modelling: major roads and streets will be needed. The following supplements for the existing data will be needed for dispersion modelling purposes

    - Volumetric outflow of the smoke gases from the stacks
    - Temperature of the outflow gases
    - Temporal variation of the emissions
    - Dimensions (especially height) of the buildings by which the stacks are

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3 – EXPENDITURES

Twinning Contract number: MK05/IB-EN-01 – 05MAC01/13/102 ***Makedonia - 2006***

Section 3: Expenditures 1st March 2007-31st May 2007

Provide total figures of disbursement in the reporting period for key groups of costs

Travels (9 Missions, third quarter year period, including study tour (5 persons) in Finnish Meteorological Institute, Finland)

Expert fees	**16 115,00 €**
Twinning Management costs	**24 172,50 €**
Per diems	**16 672,00 €**
Air tickets	**5 967,39 €**
Taxi fares (22:00-7:00)	**217,59 €**

		Actual travel costs 1stSep 06- 31st May 07
Total	*63 144,48 €*	*173 862,39 €*

1.1 RTA remuneration and allowances

	Actual costs 1st March 07-31st May 07	Actual costs 1st Sep 06 – 31st March 07 The whole project	Original budget The whole project
Tiina Harju			
1. Salary+labour costs	17 742,00 €	53 226,00 €	106 452,00 €
Remaining budget			53 226,00 €
2. RTA Allowances	14 993,33 €	48 294,17 €	100 288,00 €
Remaining budget			51 993,83€
4. RTA Assistant salary	1 295,46 €	4 136,41 €	9 000,00 €
Remaining budget			4 863,59 €
Total 34 030,79 €	105 656,58 €	215 740,00 €	
Remaining budget			*110 083,42 €*

TOTAL COSTS / third quarter year period (travels and RTA costs) **97 175,27 €**

TRAVELS: COSTS BY ACTIONS 1ST SEPT 2007 – 31ST MAY 2007:

Amount paid in Euro	**Original budget, the whole project or new budget (side letter)**	**Remain to the next periods or other actions**
3. RTA training		
1 092,68 €	1 323,00 €	0 € (reallocated to 4.2.3.)
5. Project Preparation		
13 741,56 €	16 668,00 €	0 € (reallocated to 4.2.3.)

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Amount paid in Euro	Original budget, the whole project or new budget (side letter)	Remain to the next periods or other actions
Project co-ordination		
21 556,40 €	54 382,00 €	32 825,60 €
6. Project Activities		
1.1.1. Review current secondary legislation, and preparation of Table of concordance		
5 919,65	6 620,00	0 € (reallocated to 4.2.3.)
1.1.2. Analysis of the needed sub legislation for further implementation of daughter directives		
5 505,00	5 560,00	0 € (reallocated to 1.2.4.)
1.2.1. Drafting the sub legislation of monitoring and reporting for ambient air quality		
18 735,18	23 441,00 (side letter)	4 705,82 €
1.2.2. Drafting of sub legislation		
20 677,64	24 053,95 (side letter)	3 376,31 €
2.1.1. Identify and appoint stakeholders		
6 503,80	7 070,00	0 € (reallocated to 4.2.3.)
2.1.2. Support to construct the database and its content for preparation of the reports		
6 948,05	9 228,00	2 279,95 €
2.2.1. Identify data gaps for compliance with EU-based national air emission system and reporting requirements		
2 885,00	2 124,00	-761,00 €
2.2.2. Preparing a Draft a list of priorities for recommended improvements		
1 042,00	3 356,00	2 314,00 €
2.3.2. Support to develop collection of activity data		
5 255,00	10 540,00	5 285 €
3.1.1. Analyses and review of the outcomes of CARDS 2004 project		
4 312,13	4 730,00	0 € (reallocated to 1.2.4.)
3.1.2. Improvement of the methodology for preliminary assessment		
3 805,73	4 730,00	924,27 €
4.1.1. Review of the present situation at the calibration laboratory		
2 009,90	2 294,00	0 € (reallocated to 4.2.3.)
4.1.2. Preparing a Plan for Improvement of calibration laboratory		
2 403,00	2 436,00	33,00 €
4.1.4. Training technical staff on calibration of instruments		
2 132,00	2 294,00	0 € (reallocated to 1.2.4.)
4.1.5. Calibrate and check instruments in cooperation with technical staff		
2 376,00	2 435,00	0 € (reallocated to 1.2.4.)

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4.2.1. Training technical staff on repair maintenance

4 389,63	4 730,00	0 € (reallocated to 1.2.4.)

Amount paid in Euro	**Original budget, the whole project or new budget (side letter)**	**Remain to the next periods or other actions**
4.4.1. Review of present situation for data management system		
2 019,18	2 294,00	0 € (reallocated to 1.2.4.)
4.4.2. Identified needs for furthered development of the software		
1 602,00	1 624,00	22,00 €
4.4.3. Plan and specification for procurement of new data management software		
801,00	2 810,00	2 009,00 €
4.5.1. Review of present situation in Central Environmental Laboratory on GCs analysis for air samples		
1 977,07	2 294,00	0 € (reallocated to 1.2.4.)
4.5.2. Preparing a Plan for improvement of chemical laboratory		
5 180,51	7 166,00	0 € (reallocated to 1.2.4.)
4.5.3. Training for GC analysis of air samples		
9 701,30	17 105,00	7 403,70 €
4.6.1. Check instruments and plan for improvement of mobile emission laboratory		
3 560,98	3 856,00	0 € (reallocated to 1.2.4.)
4.7.1. Draft specification and priority list of investments		
4 505,00	6 996,00	2 491,00 €
5.1.1. Specification and procurement of an appropriate system for AQ modelling on local scale		
3 575,94	4 730,00	1 154,06 €
5.2.1. Investigate meteorological data and develop methods to provide it for dispersion modelling		
3665,77	4 730,00	1064,23 €
5.3.1. Training course on dispersion modelling and methods for validation and for scenario making		
3 598,29	4 730,00	1 131,71 €
5.3.2. Develop training course materials		
2 385,00	4 730,00	2 345,00 €

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ANNEX I : Expenditures (See excel file - Expenditure Report Template)
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Section 3: Expenditures

Section No.	Name of services / goods purchased or direct costs	Date(s) of services	Invoice number	Date of invoice	Breakdown and clarification	Amount paid in local currency (if applicable)	INFO-EURO exchange rate	Amount paid in EUR	Amount foreseen in original budget (left after previous periods)	Amount introduced by side letter /amendment	Amount charged to contingencies
xx	**Activity no. [Project co-ordination]**										
	Mission of expert **[Harri Pietarila]**	19/3/2007-23/3/2007									
	Fees				**[3 X 250,00]**			750,00			
	Flat rate compensation				**1,5*750,00**			1 125,00			
	Per diem				**[3]** x 167,00			501,00			
	Air ticket **[PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]**				**[2. CLASS]**			399,44			
	Local travel to location				**Taxi**			22,22			
	Total							**2 797,66**	**35 623,26**		
xx	**Activity no. [1.2.1. Drafting the sub legislation of monitoring and reporting for ambient air quality]**										
	Mission of expert [Mika Seppälä, Alec Estlander, Wolfgang Spangl]	19/3/2007-30/3/2007, 20/3/2007-30/3/2007, 22/3/2007-30/3/2007									
	Fees				**4 x 250,00 + 4 x 450 + 7 x 441,00**			5 887,00			
	Flat rate compensation				**1,5 x 5887,00**			8 830,50			
	Per diem				**5x167+ 5x167+ 7x167**			2 839,00			
	Air ticket				**[2. CLASS]**			1107,57			
	Local travel to location				**Taxi**			71,11			
	Total							**18 735,18**	26 055,00	**(new budget 23 441, but savings not further reallocated)**	
xx	**Activity no. [1.2.2. Drafting of sub legislation - 2004/224/EC regarding National plans and programs]**										
	Mission of expert **[Alec Estlander, Mika Seppälä, Lorenz Moosmann]**	20/3/2007-30/3/2007, 19/3/2007-30/3/2007, 22/3/2007-26/3/2007									
	Fees				**[5 X 450 + 5 x 250 + 3 x 326]**			4 478,00			
	Flat rate compensation				**1,5 x 4478**			6 717,00			
	Per diem				**[6 x 167 + 6 x 167 + 3 x 167,00]**			2 505,00			
	Air ticket **[PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]**				**[2. CLASS]**			333,69			
	Local travel to location Home-Airport										
	Local travel to location Home-Airport										
	Total							**14 033,69**	23 175,00	**(new budget 24 053,95, but savings not further reallocated)**	

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xx	**Activity no. [3.1.1. Analyses and review of the outcomes of CARDS 2004 project]**										
	Mission of expert **[Harri Pietarila]**	19/3/2007-23/03/2007									
	Fees				**[1 x 250,00]**			250,00			
	Flat rate compensation				**1,5*250,00**			375,00			
	Per diem				**[1]** x 167,00			167,00			
	Air ticket **[PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]**				**[2. CLASS]**						
	Local travel to location										
	Total							**792,00**	**1 209,87**	**All the savings are reallocated to the extra activity: 1.2.4. CAFE directive**	
xx	**Activity no. 3.1.2. Improvement of the methodology for preliminary assessment**										
	Mission of expert Birgitta Alavippola	5/3/2007-10/3/2007									
	Fees				**[4 x 250,00]**			1 000,00			
	Flat rate compensation				**1,5*1000,00**			1 500,00			
	Per diem				**[5]** x 167,00			835,00			
	Helsinki - Skopje Air ticket				**[2. CLASS]**			439,25			
	Local travel (Taxi) to location Helsinki Airport - home							31,48			
	Total							**3 805,73**	**4 730,00**		
xx	**Activity no. 4.1.4. Training technical staff on calibration of instruments**										
	Mission of expert **Jari Walden**	22/4/2007-27/4/2007									
	Fees				**[2 X 250,00]**			500,00			
	Flat rate compensation				**1,5*500,00**			750,00			
	Per diem				**[2]** x 167,00			334,00			
	Air ticket **[PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]**				**[2. CLASS]**			507,26			
	Local travel to location Home-Airport				**Taxi**			40,74			
	Local travel to location Home-Airport										
	Total							**2 132,00**	**2 294,00**	**All the savings are reallocated to the extra activity: 1.2.4. CAFE directive**	

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Section No.	Name of services / goods purchased or direct costs	Date(s) of services	Invoice number	Date of invoice	Breakdown and clarification	Amount paid in local currency (if applicable)	INFO-EURO exchange rate	Amount paid in EUR	Amount foreseen in original budget (left after previous periods)	Amount introduced by side letter /amendment	Amount charged to contingencies
xx	**Activity no. 4.1.5. Calibrate and check instruments in cooperation with technical**										
	Mission of expert **[Jari Walden]**	22/4/2007-27/4/2007									
	Fees				**[3 X 250,00]**			750,00			
	Flat rate compensation				**1,5*750,00**			1 125,00			
	Per diem				**[3]** x 167,00			501,00			
	Air ticket [PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]				**[2. CLASS]**						
	Local travel to location										
	Total							**2 376,00**	**2 436,00**	**All the savings are reallocated to the extra activity: 1.2.4. CAFE directive**	
xx	**Activity no. 4.2.1. Training technical staff on repair maintenance**										
	Mission of expert Kaj Lindgren	12/3/2007-16/3/2007									
	Fees				**[5 x 250,00]**			1 250,00			
	Flat rate compensation				**1,5*1250,00**			1 875,00			
	Per diem				**[5]** x 167,00			835,00			
	Helsinki - Skopje Air ticket				**[2. CLASS]**			399,44			
	Local travel (Taxi) to location Helsinki Airport - home							30,19			
	Total							**4 389,63**	**4 730,00**	**All the savings are reallocated to the extra activity: 1.2.4. CAFE directive**	
xx	**Activity no. 4.5.3. Tarining for GC analyses of air samples Mission: Study visit in Helsinki, Finland**										
	Aleksandra Nestorovska Krsteska, Vesna Kostic, Margareta Cvetkovska, Mirko Cvetkovski, Suat Ibishi	06/05/2007-12/05/2007									
	Per diem				5 x 6 days x 244,00 Per diem			7 320,00			
	Air ticket **[PLACE OF DEPARTURE Skopje -DESTINATION Helsinki]**				**[2. CLASS]** 5 x 476,26			2381,3			
	Total							**9 701,30**	**17 105,00**		

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Section 3: Expenditures

Section No.	Name of services / goods purchased or direct costs	Date(s) of services	Invoice number	Date of invoice	Breakdown and clarification	Amount paid in local currency (if applicable)	INFO-EURO exchange rate	Amount paid in EUR	Amount foreseen in original budget (left after previous periods)	Amount introduced by side letter /amendment	Amount charged to contingencies
xx	**Activity no. 5.3.1. Training course on dispersion modeling and methods for validation and for scenario making**										
	Mission of expert **[Ari Karppinen]**	11/3/2007-16/3/2007									
	Fees				**[3 X 250,00]**			750,00			
	Flat rate compensation				**1,5*750,00**			1 125,00			
	Per diem				**[3]** x 167,00			501,00			
	Air ticket [PLACE OF DEPARTURE Helsinki -DESTINATION Skopje]				**[2. CLASS]**			399,44			
	Local travel to location Taxi Helsinki Airport - home							21,85			
	Total							**2 797,29**	**3 929,00**		
xx	**Activity no. 5.3.2. Develop training course materials**										
	Mission of expert [Ari Karppinen]	11/3/2007-16/3/2007									
	Fees				**[2 x 250,00]**			500,00			
	Flat rate compensation				**1,5*500,00**			750,00			
	Per diem				**[2]** x 167,00			334,00			
	Helsinki - Skopje Air ticket				**[2. CLASS]**						
	Total							**1 584,00**	**3 929,00**		
xx	**Resident Twinning Adviser [Tiina Harju]**								(3 months)		
	Gross salary	31.3.2007, 30.4.2007 and 31.5.2007	70006, 70008, 70010	31.3.2007, 30.4.2007 and 31.5.2007	3 x **[MONTHLY SALARY 3553,20]**			10 659,60	10 659,60		
	Non wage labour costs	31.3.2007, 30.4.2007 and 31.5.2007	70006, 70008, 70010 and 55174	31.3.2007, 30.4.2007 and 31.5.2007	3 x 2025,80			6 077,40	6 077,40		
	6%of sal+non wage	31.5.2007	55174	31.5.2007	3 X 335,00			1 005,00	1 005,00		
	RTA 50 % allowances (RTA costs reports)				**(Monthly cost reports)**						
	Total							**17 742,00**	**17 742,00**		
xx	**RTA Assistant Martina Toceva (acting on a freelance basis) salary costs**	31.3.2007, 30.4.2007, 31.5.2007	10.4.2007 29045 10.5.2007 29048 31.5.2007 29052	10.4.2007, 10.5.2007, 31.5.2007	10.4.2007 431,82 10.5.2007 409,09 31.5.2007 454,55			1 295,46	1 500,00		
	Total							**1 295,46**	**1 500,00**		

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REPORT OF RTA COSTS IN MARCH 2007

TWINNING PROJECT
Project Title: Air Quality Improvement
Twinning Contract Number: MK05/IB-EN-01
Agency Contract Number: 05MAC01/13/102

Name of services / goods purchased or direct costs	Date(s) of services	Invoice No.	Date of invoice	Breakdown and clarification	Costs, €	Notes
Daily Allowances (50%)	from [date] to [date] 1.-31.3.2007	No. of MS administration document against which payment has been made to the RTA	Date of this MS administration document	[No of days] * 50% [per diem] 31 days* 93.5 €/day	2898.5	1. The applicable rates are fixed at the time of the signature of the Twinning Contract for its entire duration. They are not subject to revision during the lifetime of the project. 2. This is checked against the dates of travel to/from place of duty for the first and last quarter respectively
Monthly allowance for special economically priced return tickets	Period	Quotation No.	Quotation date	[Name of travel agency that has issued the quotation] [No. of months] * [flat rate as stated in the quotation] AREA, 6th month 1 month * 600 €	600.0	1. Only applicable, if no removal of personal belongings or any other costs related to accompanying family members are charged to the project. 2. Eligible from the second month of secondment
Taxi Flight 7:00-22:00	2.3.2007		2.3.2007	Transfer from the airport, Helsinki- home, Espoo 44.0 €	44.0	
Accommodation	from [date] to [date] 1.3.2007- 31.3.2007	No. of receipt FMI: 55090	Date of receipt FMI paid 27.3.2007	[Starting date of lease] [Name of landlord] (for first report only and after that if changed) [No. of months] * [monthly rent] 1.11.2006, Marija Boskovska, 1 month * 1 250,00 €/month	1 250,00	1. Full month's rent can be claimed even if some of the period is beyond the period reported in the Quarterly Report. 2. The first month for which rent is claimed must not overlap with the period claimed under "Allowances for first 30 days". In case of overlap the first rent is reduced accordingly
TOTAL					**4792,50**	

REPORT OF RTA COSTS IN APRIL 2007

TWINNING PROJECT
Project Title: Air Quality Improvement
Twinning Contract Number: MK05/IB-EN-01
Agency Contract Number: 05MAC01/13/102

Name of services / goods purchased or direct costs	Date(s) of services	Invoice No.	Date of invoice	Breakdown and clarification	Costs, €	Notes
Daily Allowances (50%)	from [date] to [date] 1.-30.4.2007	No. of MS administration document against which payment has been made to the RTA	Date of this MS administration document	[No of days] * 50% [per diem] 30 days* 93.5 €/day	2805.0	1. The applicable rates are fixed at the time of the signature of the Twinning Contract for its entire duration. They are not subject to revision during the lifetime of the project. 2. This is checked against the dates of travel to/from place of duty for the first and last quarter respectively
Monthly allowance for special economically priced return tickets	Period	Quotation No.	Quotation date	[Name of travel agency that has issued the quotation] [No. of months] * [flat rate as stated in the quotation] AREA, 6th month 1 month * 600 €	600.0	1. Only applicable, if no removal of personal belongings or any other costs related to accompanying family members are charged to the project. 2. Eligible from the second month of secondment
Taxi Flight 22:00-07:00	19.4.2007		19.4.2007	Transfer from the airport, Helsinki- home, Espoo 43.6 €	43.6	
Taxi Flight 22:00-07:00	23.4.2007		23.4.2007	Transfer from the airport, Skopje- home, Skopje 700 MDK/61,3 MKD/€ = 11.42 €	11.42	
Accommodation	from [date] to [date] 1.4.2007- 30.4.2007	No. of receipt FMI: 55117	Date of receipt FMI paid 24.4.2007	[Starting date of lease] [Name of landlord] (for first report only and after that if changed) [No. of months] * [monthly rent] 1.11.2006, Marija Boskovska, 1 month * 1 250,00 €/month	1 250,00	1. Full month's rent can be claimed even if some of the period is beyond the period reported in the Quarterly Report. 2. The first month for which rent is claimed must not overlap with the period claimed under "Allowances for first 30 days". In case of overlap the first rent is reduced accordingly
TOTAL					**4710,02**	

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REPORT OF RTA COSTS IN MAY 2007

TWINNING PROJECT
Project Title: Air Quality Improvement
Twinning Contract Number: MK05/IB-EN-01
Agency Contract Number: 05MAC01/13/102

Name of services / goods purchased or direct costs	Date(s) of services	Invoice No.	Date of invoice	Breakdown and clarification	Costs, €	Notes
Daily Allowances (50%)	from [date] to [date] 1.-31.5.2007	No. of MS administration document against which payment has been made to the RTA	Date of this MS administration document	[No of days] * 50% [per diem] 31 days* 93.5 €/day	2898.50	1. The applicable rates are fixed at the time of the signature of the Twinning Contract for its entire duration. They are not subject to revision during the lifetime of the project. 2. This is checked against the dates of travel to/from place of duty for the first and last quarter respectively
Monthly allowance for special economically priced return tickets	Period	Quotation No.	Quotation date	[Name of travel agency that has issued the quotation] [No. of months] * [flat rate as stated in the quotation] AREA, 6th month 1 month * 600 €	600.00	1. Only applicable, if no removal of personal belongings or any other costs related to accompanying family members are charged to the project. 2. Eligible from the second month of secondment
Health and accident insurance for RTA	from 1.1.2007 to 31.12.2007	Insurance policy No. 70-0900-9178-0/998 FMI 14795	Insurance policy date 18.05.2007 FMI paid 25.5.2007	[No of months 12] * [monthly rate] or [Amount paid] Amount paid	748,80	1. Can be claimed for a period longer than the period reported in the Interim Quarterly Report. 2. If there is only one policy for the RTA, spouse and/or children, the insurance policy must show the names of the insured persons and the Insurance company must issue an additional document stating the monthly rates for the different insured persons.
Accommodation	from [date] to [date] 1.5.2007-31.5.2007	No. of receipt FMI: 55145	Date of receipt FMI paid 11.5.2007	[Starting date of lease] [Name of landlord] (for first report only and after that if changed) [No. of months] * [monthly rent] 1.11.2006, Marija Boskovska, 1 month * 1 250,00 €/month	1 250,00	1. Full month's rent can be claimed even if some of the period is beyond the period reported in the Quarterly Report. 2. The first month for which rent is claimed must not overlap with the period claimed under "Allowances for first 30 days". In case of overlap the first rent is reduced accordingly
TOTAL					**5497,30**	

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APPENDICES

- **Programme of the study tour in Finland 7th-11th May 2007**
- **Discription from study tour and the RTA's programme during the study tour**
- **MS Experts' mission reports**
- **Study tour report prepared by the BC Experts**
- **Presentations during study tour in Finland**

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STUDY TOUR PROGRAMME ANNEX

PAH-ANALYSIS STUDY TOUR TO FINLAND

Time: **7-11 May, 2007**
Place: **Finnish Meteorological Institute (FMI)**
Laboratory of Air Chemistry
Address: **Erik Palménin aukio 1, FI-00560 HELSINKI**

- FMI website: http://www.fmi.fi/en/index.html
- FMI Location on a map: http://www.fmi.fi/organization/contacts_30.html
- Hotel Arthur: http://www.hotelarthur.fi/index.php?lang=eng&area=1&id=hotelli
- Helsinki website (maps, public transport etc.): http://www.helsinki.fi/en/

Lunch in the canteen at the FMI

PROGRAMME

Monday 7th May

8:30 Pick-up from the Hotel Arthur, Vuorikatu 19, FI-00100 HELSINKI
9:00 Kick-off meeting (Seminar room Natura, 3B19c)

- FMI in nutshel, Mats Wiljander
- FMI's Air Quality Research, Jussi Paatero
- Assessment of PAH and HMs in Finland, Harri Pietarila
  - Preliminary assessment, zones and requirements for assessment
  - National legislation in Finland
  - Dispersion modeling

12:00-17.30 PAH-method (Sampling and sample preparation)

Tuesday 8th May from 8:30-17:30

- PAH-method (Quality assurance, control charts, traceability, certified reference materials, archives)

Wednesday 9th May from 8:30-17:30

- PAH-method (Identification and quantification of the PAH-compounds)

Thursday 10th May from 8:30-17:30

- Benzene (Passive sampling method)
- SO_2 and NO_x (Passive sampling method)
- Analysis of trace-elements (Sample preparation, elimination of contamination)

Evening programme at the FMI

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Friday 11th May from 8:30-17:30

- Quality system (EN ISO/IEC 17025:2005)
- SOPs
- Preliminary plan for the next mission in the BC

Participants

Aleksandra Nestorovska Krsteska, Junior Associate, MEPP

Margareta Cvetkovska, Junior Associate, MEPP

Suat Ibishi, Junior Associate, MEPP

Vesna Kostic, Head of Food Department, RIHP

Mirko Cvetkovski (Associate), HMA

Tiina Harju, Resident Twinning Advisor, FMI

Jussi Paatero, Vice President,FMI

Mats Viljander, International Project Manager, FMI

Harri Pietarila, Head of Research Group Air Quality Expert Services, FMI, MS PL in the Twinning project

Hannele Hakola, Head of the Air Chemistry Laboratory, FMI

Vuokko Karlsson, Project Manager, FMI

Mika Vestenius, Assistant Research Scientist, FMI

Ulla Makkonen, Senior Research Scientist, FMI

Katariina Pyy, Research Scientist, FMI

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DISCRIPTION ABOUT STUDY TOUR AND THE RTA'S PROGRAMME DURING THE DURING STUDY TOUR

The study tour started 7th May with the lectures given by the International Project Manager Mats Wiljander, MS PL Harri Pietarila and Ms Expert Hannele Hakola. Mr. Mats Wiljander gave a presentation of the goals, project topics, and services of the FMI. The Assessment of PAHs and benzene analysis in Finland were presented by MS PL Harri Pietarila. MS Expert Hannele Hakola introduced activities which are carried out by the air quality research department.

7th May
During the afternoon Mr. Mika Vestnius introduced the Gas chromatography laboratory. It was given a training on a preparation of Teflon filters for extraction a washing of the equipment, using standard reference materials and sandwich techniques for internal standard method.

8th May

Siting of passive sampling in Helsinki

In the morning, Mrs Hannele Hakola and Mr. Mika Vestenius brought the BC experts to a visit to one of the Helsinki urban stations. Due to the visit the BC experts gained more clear picture for the passive sampling of benzene and passive sampling of SO_2 and NO_x.

The training continued in the Gas chromatography laboratory where Mr. Mika Vestenius continued with his task by introducing evaporation of the samples, making of standard dilution; cleaning of the GC injector, filter sample in GC vials.

Afterwards, an internal standard method in theory and practice and with the sample sequence was introduced. At the end the condition of the GC was checked, auto tune performed and the analysis of the samples were started.

9th May

The training continued in the Gas chromatography laboratory. The results were studied using the Chemstation program. The following issues were introduced; the data processing by using integration corrections, bracketing calibration, report and how to move results.

Measuring station

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Mr.Risto Hillamo, research professor from Air quality research department, presented one measuring station in which not only employees but PhD students were involved in maintenance of the measuring equipment. Not only basic analysers were shown but also PM1, PM2,5 and PM10 instruments.

In the afternoon, the expert Mrs. Hannele Hakola presented the equipment used for GC analysis of benzene passive samples, and equipment used for VOC analysis in the air.

10th May

The training continued with Mr. Mika Vestenius in GC laboratory regarding the same issue of data analysis and practising integration of the chromatographic peaks. The session was finished with questions and discussion.

Afterwards, the whole group was introduced with the laboratory in which analysis SO2 and NOx passive samples are analyzed by Mrs Ulla Makkonen. She introduced the equipment, which are used at the FMI in this area, sampling procedures, type of filters and measuring methods for these type of pollutants.

Vice President Mr. Mikko Alestalo from the FMI gave short description of FMI activities, goals, and cooperation with University. The discussion was carried on regarding the climate change problems in Europe and the importance of the Twinning project Air Quality Improvement.

The working day continued with Mrs Kateriina Pyy and Mrs Ulla Makkonen who showed weighing of the filters, washing of equipment and mailing the samples. Afterwards the training continued on pre-treatment of filters, preparation of the sample for analysis of HM, ICP analysis and calibration of instruments and processing of the data.

11th May

The morning session started with training of QA/QC of air quality data. MS expert Vuokko Karlsson introduced an ISO 17025:2005 standard. She closely gave a description for the type of services and supplies of equipment and chemicals, technical requirements, personnel, accommodation and environmental conditions, analysis methods, sampling, handling on test and measuring items and quality assurance.

The session was closed with discussion on the next mission of the MS experts which will be held in the BC in November. The BC experts told their plans for the activities which will be carried out between the missions. The most

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important is that the BC experts are trained to use the GC software by then and needed chemicals and equipment are supplied.

At the end the MS PL Harri Pietarila presented the Air Quality portal in the entrance hall of the FMI. The portal was published on 9th May 2007.

The study tour in Finland was of great important. The BC experts met a lot of MS experts, for example experts for HM and analysis of SO_2 and $NO_x$from passive samplers which are not planned in missions in the BC and additional knowledge was gained. It was also important to see the sampling locations, equipment of the laboratories and QA/QC implemented procedures in the FMI, and to learn from the MS experts' experience.

It would not have been possible to give complete training on QA/QC in the BC because it is impossible to carry a stack of files to another country (needs too much place and too heavy). Seeing of the existing needed documents in the files will be also helpful in the Twinning projects concerning the activities 4.3.1. Developing draft QA/QC plan and 4.3.2. Training on QA/QC.

During the study tour it was decided that the BC expert Suat Ibishi from the MEPP would have a possibility to be on training on PAH analysis in the RIHP for three weeks. The training will take place when the RIHP have samples to be analysed. There is no standards and GC column in the Central Environmental Laboratory which is a part of the Ministry of Environment.

List of given documents during the study tour:

1. Plan according to EN ISO IEC 17025 General requirements for the competence of testing and calibration laboratories (ISOIEC 17025 2005)
2. Analytical_intercomparison
3. Certificate of analysis
4. Summary of EMEP 24th Interlaboratory_comparison
5. Programme for Thursday 10th may afternoon - Analysis of trace elements
6. List_of_approved_suppliers
7. List_of_measurement_procedures
8. List of SOPs
9. Maintenance and calibration plan
10. Determination of PAH Compounds in the PM10 Samples; Benzo(a) pyrene, benzo(b+j+k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h+a,c)antracene, benzo (g,h,i)-perylene, phenantrene, fluoranthene, pyrenePAH analysis procedure in the FMI
11. Method for analysing aromatic hydrocarbons in air
12. Plan and follow up
13. Record of training and competence

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14. The uncertainty of Benzo(a)pyrene prEN15549 - calculation

List of Standards given before or during the study tour:

1. 1. prEN 15549 Air quality - Standard method for the measurement of the concentration of benzo(a)pyrene in ambient air (August 2006)
2. 2. EN 12341 Air quality - Determination of the PM 10 fraction of suspended particulate matter - Reference method and field test procedure to demonstrate reference equivalence of measurement methods (November 1998)
3. 3. ISO 12884 Ambient air - Determination of total (gas and particle - phase) polycyclic aromatic hydrocarbons - Collection on sorbent - backed filters with gas chromatographic/mass spectrometric analyses (April 2000)
4. 4. EN ISO IEC 17025 General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005) (May 2005)

During the study tour the RTA Tiina Harju had discussions with most of the MS Experts involved in the Twinning project concerning a content and exact time of their missions during the rest of the Twinning project. Some of those MS experts, for instance MS expert Pirjo Kuronen, will come first time to a ission to the BC in summer or autumn. Her mission concerning training on BTEX analyser was added to the Twinning project by a side letter no. 3 (dated 23 March 2007).

It was useful to discuss with them from face to face about the current situation in the MEPP and the Twinning project in order to plan coming missions optionally. Sometimes it is more efficient to discuss from face to face compared to communicate through emails. The RTA Tiina Harju has not a possibility to call international calls with the phone in the office provided by the MEPP.

The RTA Tiina Harju contacted the Personal Assistant to the Ambassador of Finland for the Western Balkans Saila Kankaanpaa in April to find out the Ambassador Alpo Rusi's next visit in the BC because during the discussion between the Head of the EAR Luigi Sandrin and the RTA Tiina Harju the Head of the EAR Luigi Sandrin ask the RTA Tiina Harju let him know the Ambassador Alpo Rusi's next visit time in Skopje in order to make possible to organise dinner between the Head of the EAR and the Ambassador Alpo Rusi. There is no Embassy of Finland in the BC. Based on this contact the Head of the EAR invited the Ambassador Alpo Rusi on the 8 May 2007 to Erwan Residence for a buffet dinner with the European Parliament Delegation and EU MS Ambassadors.

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The Personal Assistant to the Roving Ambassador of Finland for the Western Balkans Saila Kankaanpaa had invited after this discussion RTA Tiina Harju to the Office of the Roving Ambassador of Finland for the Western Balkans which is located in the Ministry for Foreign Affairs of Finland in Helsinki. Dr. Alpo Rusi' term of duty as the Roving Ambassador of Finland for the Western Balkans, based in Helsinki, ended on Thursday, 31 May 2007. Pending the beginning of the term of duty of Dr. Rusi's successor, Mr. Touko Piiparinen, Attache, will be in charge of the office.

The RTA Tiina Harju had a meeting with the Personal Assistant to the Roving Ambassador of Finland for the Western Balkans Saila Kankaanpaa 10 May 2007 during the study tour. Counsellor Kirsti Hyypiä from the Unit for the Western Balkans, Ministry for Foreign Affairs of Finland was also present in the meeting. The Ambassador Alpo Rusi was in the BC 10 May 2007.

The RTA had also a meeting with the Twinning team in the Ministry for Foreign Affairs of Finland. All members of the Twinning team participated in the meeting; National Twinning Coordinator Eija-Leena Linkola, Project Adviser Leena Tuomi, Twinning Team Assistant Laura Autio and Trainee Johanna Rasimus.

In addition to those meetings the RTA Tiina Harju met Administrative Attache from Unit for Western Balkans Ritva Miekkoniemi (local co-operation fund for the NGOs in the BC), Research Secretary from the Unit for Western Balkans Anu Rämä (discussion about the UNDP project) and finally the Director of the Unit for Western Balkans Juha Ottman and discussed with him about the Western Balkans, a possibility to establish the Embassy of Finland to the BC. Unfortunately it is not a plan in the near future. Especially the RTA Tiina Harju brought up VISA issue. Visas for the BC experts in the Twinning project for the study tour were applied in the Embassy of Finland in Belgrad. The visa procedure is anyhow rather time consuming and sending applications to another country makes it even more complicated.

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