

FACILITY FOR EUROMED DIALOGUE AND EXCHANGE OF BEST PRACTICES

MEDSTAT IV

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Session on Availability, completeness, consistency,
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The Production of Geo-referenced Air transport
Statistics

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The MEDSTAT IV Approach: Performance of mirror exercises and search for sources of asymmetries

- Asymmetries are the difference between the traffic and transport volumes statistics of partner airports
- Each airport collects data on traffic and transport volumes for both arrivals and departures (departures and arrivals, loading and unloading). In theory the mirror flow collected by the partner airport (i.e. the last airport and the next airport) should match.

The MEDSTAT IV Approach: Performance of mirror exercises and search for sources of asymmetries

- **Mirror exercises comparing bilateral transport data aim at identifying, investigate and reduce the bilateral asymmetries to improve the quality of traffic and transport statistics produced by each airport and each country as a whole**
- **Aim of mirror exercises**
 - Identify, investigate and reduce the bilateral asymmetries
 - Improve the quality of the statistics on each airport
 - Eventually produce a set of fully reconciled statistics

The measurement of asymmetries

- **Asymmetry Coefficient (AC1)**

- **AC1** = $A(BA) / D(BA)$ resp. $A(AB) / D(AB)$

- **Asymmetry Coefficient (AC2)**

- airport A arrivals / airport B departures
(flow from B to A)

$$\mathbf{AC2} = A(BA) - D(BA) / A(BA) + D(BA)$$

- airport A departures / airport B arrivals
(flow from A to B)

$$\mathbf{AC2} = A(AB) - D(AB) / A(AB) + D(AB)$$

- **Asymmetry Coefficient (AC3)**

- Asymmetry in value as a proportion of the average of the flows recorded by the partners

$$\mathbf{AC3} = A(AB) - D(AB) / (A(AB) + D(AB)) / 2$$

The MEDSTAT IV Approach: Performance of mirror exercises and search for sources of asymmetries

- Compare the available data on bilateral flows: Tables with the following lines and columns
 - Lines: nature of the flow (flights, passengers, freight...)
 - Columns: 2 directions and for each direction: data from the two partners (2 columns) and absolute asymmetry
- Calculation of asymmetry coefficient A_2 (relative asymmetry)
- Identification of major absolute and relative asymmetries

The MEDSTAT IV Approach: Performance of mirror exercises and search for sources of asymmetries

- **Methodological approach**
 - Possible differences in **concepts, definitions and classifications** used par partner airports (e.g. flight stage vs on flight origin and destination or passengers on board vs passengers carried)
- **Detailed analysis of the information systems**
 - Possible sources of weaknesses and discrepancies in **information systems, tools and procedures** in place within the partner airports (e.g. data source, codification, manual treatments)

Major sources of asymmetries identified

- **Concept of partner airport:** last/next vs departure/arrival (resp. loading/unloading)
- Inclusion or not of **direct and indirect transit**
- Different **data sources** / different documents used in the elaboration of statistics / different information processing systems

Recommendations for the development of airports' information systems

- **Develop a single window system** with all stakeholders (airports, airlines, customs, civil aviation authorities, ministries of transport, national statistical institutes...)
- **Involve the Ministry of Transport and the National Statistical Institute in the Airport community**
- Include a **statistical application** within the single window system

Recommendations for the development of airports' information systems

- **Diversity of sources**

- Airport proprietary system
- Airlines data
- Border police
- Customs
- Surveys of passengers
- Possible development of Big Data?

 Need to harmonize sources or their content

 Systematically include information on origin and destination

Recommendations for the development of airports' information systems

- **Need to develop data sharing between stakeholders and between partner airports**
- 👉 Develop or adopt common technical procedures and data formats (e.g. eDAMIS, SDMX...)

Recommendations for the development of national geo-referenced air transport statistics

- **Develop geo-referenced statistics on an airport to airport basis** for aircraft movements (last/next airport basis), passengers (departure/arrival basis) and freight (loading/unloading basis)
- **Define a confidentiality policy** that respects commercial and strategic interests of stakeholders while allowing an analysis of movements on an airport to airport basis (or at least country to country)
- **Develop global data** (not geo-referenced) by type of aircraft, type of freight and type of consignment for goods.

Recommendations for the development of national geo-referenced air transport statistics

- **Need to develop national statistics taking into account the multiplicity of users and their needs**
 - National specificities and needs
 - International comparisons
 - Different audiences and usages
 - Different dissemination formats and levels of details
 - International dissemination platforms

Recommendations for the development of national geo-referenced air transport statistics

- **Need to reinforce regional and international cooperation**
 - Reinforced cooperation to be implemented at airport authority level
 - How to foster the development of shared systems, tools and methods?
 - What kind of structure for a systematic cooperation between airports of the region?

Thank you