Case study DELTA and the significance of the SmartResilience project for the aviation security sector

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# Measuring „smartness” of an Airport

<table>
<thead>
<tr>
<th>Airport</th>
<th>• All about manual and analogic processes. Long lag-time between resource solicitation and the airport answer.</th>
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</thead>
<tbody>
<tr>
<td>Airport 2.0</td>
<td>• Implementation of self-service thanks to the automation of some key flow processing tasks (bag-drop, passport check).</td>
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<td>Airport 3.0</td>
<td>• Several focused initiatives to leverage digitalization so that to optimize flow monitoring and processing.</td>
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<td>Airport 4.0</td>
<td>• Full-connected with all stake-holders. Superior proactivity and reactivity to adapt to the real-time solicitation of the airport (operational needs, customer requests etc…).</td>
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**RENDŐRSÉG TUDOMÁNYOS TANÁCSA**
Smart Airport and Smart City
Data acquisition source: DELTA drill
DELTA Case 1

Airside

Landside

Fire safety system CERBERUS disabled!
Hamburg airport evacuated after toxin affects 50 passengers

Fire services rule out terrorist attack after toxin, believed to be pepper spray, leads to air traffic shutdown of more than an hour

Hundreds of passengers were temporarily evacuated, more than 50 people were injured and air traffic was halted for more than an hour on Sunday afternoon after an irritant gas was circulated around Hamburg airport via its air-conditioning system.
DELTA Case 2B
Organizational communication in crises: data

1. Communication data from the exercise „Storm 2016“;
2. data (message and technical logs) provided by National University of Public Service, Hungary;
3. more than 5,000 messages exchanged between approx. 90 agencies over two days;
4. more than 16,000 records in the technical logs.

![Graph showing message frequency over time for day 1 and day 2]
What we were looking after? – Who talks to whom

1. In an emergency situation, time is the essence.
2. Nowadays the communication network plays a crucial role in timely and accurate response.
Network measures for communication networks I: Betweenness centrality

1. Betweenness centrality measures how important is a node in a network to reach all other nodes?
2. For each node it measures how strong communication flows in the network would be disrupted if this node would be removed.

*Betweenness centrality detects strategic positions that are important for transmitting information, i.e. chokepoints.*
Network measures for communication networks II: Katz prestige

1. Katz prestige is a measure closely related to Google’s PageRank

2. It’s not only about how many connections you have, but how well those people are connected too ... 

Katz prestige measures how fast a given actor can distribute information through the network
Thanks for your attention!

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