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Publication date

2022

Document Version

Final published version

[Link to publication](#)

Citation for published version (APA):

Meincke, P. A., & Bagamanova, M. (2022). *From Air Traffic Management to Total Traffic Management - Preliminary Concept of Operations*. Abstract from Air Transport Research Society World Conference 2022, Antwerp, Belgium.
<https://whova.com/embedded/session/1P-f2S1aZyZYELoJZioxYx2gRSJndu-kkukhaAFuNLU%3D/2578291/?widget=primary>

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From Air Traffic Management to Total Traffic Management - Preliminary Concept of Operations

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Abstract

1. Purpose of the Research

The research aims at developing a concept of operations (ConOps) that could connect aviation and all existing and future transport modes into an overall efficient transport network. Such ConOps should provide future passengers with a rapid and seamless travel experience.

2. Research design, Methodology or Approach

This paper describes a ConOps based on an ATM (Air Traffic Management) for a holistic traffic management system. For this purpose, the influences of quality management systems and other organizational facilities on the quality of passenger travel were examined. Various management systems like resources, traffic information, energy, fleet emergency calls, security and infrastructure, and applications such as weather information platforms and tracking systems have been integrated.

3. Expected research findings

The ConOps is intended to pave the way to cross-modal traffic management, in which the preferences of the travellers have a high priority. The first results show that the needs of the passengers can only be met in advance, and the traffic resources can only be used economically through close cooperation and coordination of these management systems and applications with regard to possible synergies and interactions.

4. Summary of the originality/contribution

To develop these ConOps, general and traffic management systems next to basic principles of quality management were researched in the literature, which could be summarized in a Total Traffic Management System (TTM). The ATM experience served as a model example. The ConOps can be used as a basis to build a previously non-existing TTM that can be used to manage the future of travelling and future transport modes.

Acknowledgments

X-TEAM D2D project received funding from the SESAR Joint Undertaking under grant agreement No 891061.

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