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**AIR CLUSTERS: PORTALS BETWEEN CITIES, COUNTRIES
AND CONTINENTS**

The democratization and the extreme development of air transportation supported by the economic globalization of the 21st. century led to the emergence of *air clusters*. The term *air cluster* defines the single format incorporation of a wide variety of infrastructure surrounding an air transport facility, such as an airport. The cluster incorporates the airport terminals, logistic support buildings, passenger services, aircraft service facilities, rail and road transportation hubs.

Comparable to the railway stations opening new horizons for 19th century travelers, *air clusters* play the role of new portals between cities, countries and even continents. The design of these structures in passenger traffic is key for efficiency and travel comfort. It requires the development of innovative approaches, multidisciplinary methods and techniques for the architects, urbanist

The growing amount of work of architectural firms in the field of aerial transportation requires a constant monitoring by organizations as the International Civil Aviation Organization (ICAO) or national agencies as Federal Aviation Administration (USA). A truly scientific approach is implemented by experts worldwide solving the issues of architecture and urban planning around airports. As an example, Morintseva E.P. (NAU) developed a town planning based classification applied to Aero-City and designers.

Based on recent research at NNIAP, this report highlights innovation, architectural creativity and urban-planning in the field of civil aviation transportation in Ukraine and in the world. The study of the innovations in the design of *air clusters* was presented in three parts. Macro-design of the *air cluster*. Including strategic positioning with respect to cities, adaptation to climate and geography, anticipation of future developments. Also considering the whole end-to-end travel experience of the passenger. Meso-design. Artistic composition of the façade of the buildings. Decorative characteristics reflecting local culture and traditions. Semantic meaning of the exterior. Design of volumes, shapes and colors. Micro-design of the interior. Efficient connections, adapted level of service and comfort. The sustained need for air transportation in the recent years is driven by the increasing economy class passenger traffic as opposed to the business class. The sharp separation between the passenger's needs requires specific approaches in the context of creation of an *air cluster*.

Through a study of 12 best Ukrainian and foreign *air clusters*, innovative architectural concepts and design techniques are presented in this work.