

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 4: Capacity-enhancement measures
4.1: Global measures

MANUAL ON ADVANCED-SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS

(Presented by the Secretariat)

1. INTRODUCTION

1.1 Implementation of capacity-enhancing measures in the vicinity of aerodromes is increasingly being considered by individual States and in ICAO regions. These measures are often in response to increasing demand and associated political and industrial pressures. At the same time, there has been a growing awareness within the civil aviation community that safety must be improved in light of increasing traffic, particularly in the vicinity of aerodromes. The use of procedures and separation minima inconsistent with ICAO provisions is an obvious threat to safety through a lack of standardization. Based on the above, Agenda Item 4 addresses the establishment of a global approach to capacity-enhancement

1.2 Many of the surface movement guidance and control systems in use today are not always capable of providing the necessary support to aircraft operations in order to maintain required capacity and safety levels, especially under low visibility conditions. An advanced surface movement guidance and control systems (A-SMGCS) therefore, is expected to provide adequate capacity and safety in relation to specific weather conditions, traffic density and aerodrome layout by making use of modern technologies and a high level of integration between the various functionalities.

1.3 Due to the availability and development of new technologies, including automation, it is possible to increase aerodrome capacity in low visibility conditions and on complex and high density aerodromes. In order to avoid a technology-driven approach, generic operational requirements were developed (see Chapter 2 of the attached manual) which, irrespective of the technology used, provide guidelines for the analysis and development of local requirements.

1.4 The performance requirements contained in this manual (see Chapter 4) are intended to provide a possible solution to safety or capacity-related problems identified so far; however, the A-SMGCS concept (see Chapter 1) is expected to evolve over a number of years as and when systems, procedures and technology are developed.

1.5 The operational and performance requirements contained herein (see Chapters 3 and 4) are considered to be necessary in the process of selection, development and implementation of A-SMGCS at

aerodromes where current SMGCS need to be upgraded, or its introduction on aerodromes which currently have no SMGCS, but where the traffic density and/or aerodrome layout so requires.

1.6 Substantial work on the development of A-SMGCS has been undertaken within the framework of the European Air Navigation Planning Group (EANPG). On the basis of this work, the attached manual was produced to enable manufacturers and operators, as well as certifying authorities, to develop and introduce A-SMGCS depending on local circumstances and taking into account global interoperability requirements for international civil aviation operations. The manual is currently being editorially reviewed and translated and will be published as an ICAO manual in 2004. In the meantime, however, the information in the Appendix may be used as suitable guidance material by States that wish to implement A-SMGCS.

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