GAMMA
GLOBAL ATM SECURITY MANAGEMENT

A new vision for
ATM Security Management

About GAMMA

The GAMMA Project stems from the growing need to address new air traffic management threats and vulnerabilities due, for instance, to the increased reliance on distributed enterprise computing and the automated flow of information across a ground and airborne network.

The goal of the GAMMA project is to develop solutions to emerging air traffic management vulnerabilities backed up by practical proposals for the implementation of these solutions. The project will consider the new scenarios created by the Single European Sky programme.

Worth almost fifteen million Euros, GAMMA is co-financed by the Research Executive Agency of the European Commission within the Seventh Framework Programme (FP7).

The GAMMA Approach

In order to reach its goal, GAMMA first performs a comprehensive assessment of the full set of security threats and vulnerabilities affecting the existing ATM system, considering this as a 'system of systems' and covering operational as well as technological aspects. This analysis provides the basis for GAMMA to develop a security management framework, a concrete proposal for the day-to-day operation of air traffic management security. It also defines the requirements and architecture of a security solution which includes the ability to manage incidents and crises spreading throughout the system. The solution is then tested in exercises using a validation platform that encompasses prototypes and demonstrators developed within the project.

GAMMA Vision

The ATM Security solution proposed by GAMMA builds on the principles and concepts related to Security Management in a collaborative multi stakeholder environment, while maintaining a strong link to the current international and European legal framework and the constraints given by the respect of national sovereignty. The GAMMA architectural vision remains therefore rooted in the fundamental principle that Security is a national responsibility which cannot be delegated, while recognising the opportunities opened by a collaborative framework for managing security.

For this purpose, GAMMA defines three different layers with the aim of supporting security management at Local, National and European levels.

At the **Local level**, the LGSOC is an information sharing platform collecting and processing security information from local security systems, as well as receiving and providing information from the National and European levels.

The **National level** has the capability of processing and analysing the information received from the Local level through the operation of an information sharing platform (NGSMP) that enables the detection and prediction of attacks together with impacts, as well as proposes the corresponding alerts, actions or countermeasures.

The **European level** (EGCC) enriches the opportunely sanitized information derived from the National level, extending the cooperation platform through the operation of Cyber Intelligence functionalities in order to discover possible external threats.

The GAMMA proposed solution opens the way for the European level to propose (but not enforce) recommendations on actions or measures to be taken at National and Local levels, in line with existing principles of national sovereignty and responsibilities over security issues.

The GAMMA architectural vision therefore enlarges the scope for cooperative management of ATM security while maintaining compatibility with the European ATM framework defined in the Single European Sky.
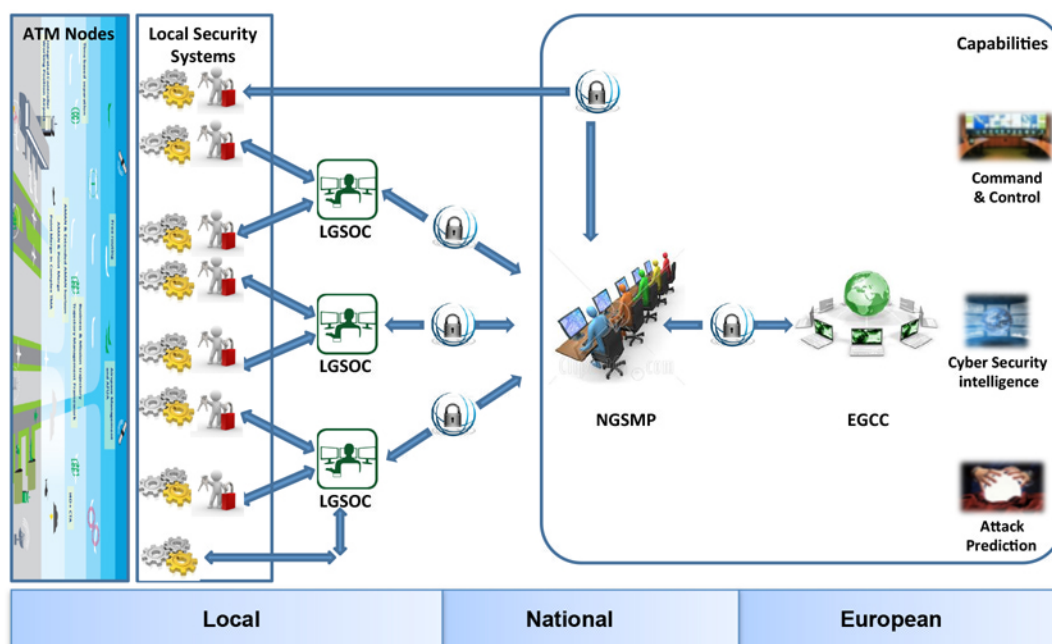
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