Leverage eu-LISA's Border Management Expertise with Analytics and AI

Mr Brecht Seifi, Technical Account Manager, SAS Institute
Mr Emmanuel Jacque, F&SI Global Head for Defense and National Security, SAS Institute

Mr Jacque from the US-based multinational developer of analytics software, opened the presentation with the statement that the two main challenges in border management today are scale and complexity. These challenges are particularly pronounced in the Schengen Area with over 42,000 kilometres of coastline, 9,000 kilometres of land borders, 1,800 land and sea border crossing points, and over 500 million border crossings per annum. These challenges are exacerbated during times of crisis, such as the war in Ukraine and the ensuing influx of refugees. The way to deal with these challenges is through risk assessment, with the ultimate aim to improve effectiveness and efficiency.

SAS has developed **analytical solutions** to improve effectiveness and efficiency of border management. In particular, SAS analytical solutions are used in **risk assessment,** in order to identify potential cases that must be targeted, e.g. passengers, parcels, containers, etc. For example, during the refugee crisis, data integration and analytical solutions were used in order to improve resource allocation.

Next, speakers outlined the **two different approaches to using analytics and AI in risk management,** with a particular focus on fraud detection in banking. In a traditional rules-based approach, known fraud patterns are encoded into the software as rules. The main disadvantage of rules-based systems is that they can't learn new patterns and update rules autonomously. In such cases machine learning approaches are more useful, as they provide for a possibility of continuous and even autonomous improvement. Although machine learning approaches have advanced significantly, hybrid approaches are still preferable in order to reach best performance.

Although artificial intelligence can help leverage existing domain expertise, leveraging domain expertise with AI requires the following:

• democratising AI (bringing it closer to the end-user);
• operationalising;
• ensuring transparency and ethics.

Democratisation, in turn, requires different approaches for different users:

• visual interface for drag and drop;
• programming interface for those who feel at ease with programming.

Mr Seifi then presented an overview of how data integration and advanced analytics solutions could benefit eu-LISA and Member States authorities by presenting an overview of a Model Ops environment. He stressed the importance of continuous assessment of model accuracy in order to reduce the number of false positives and false negatives.
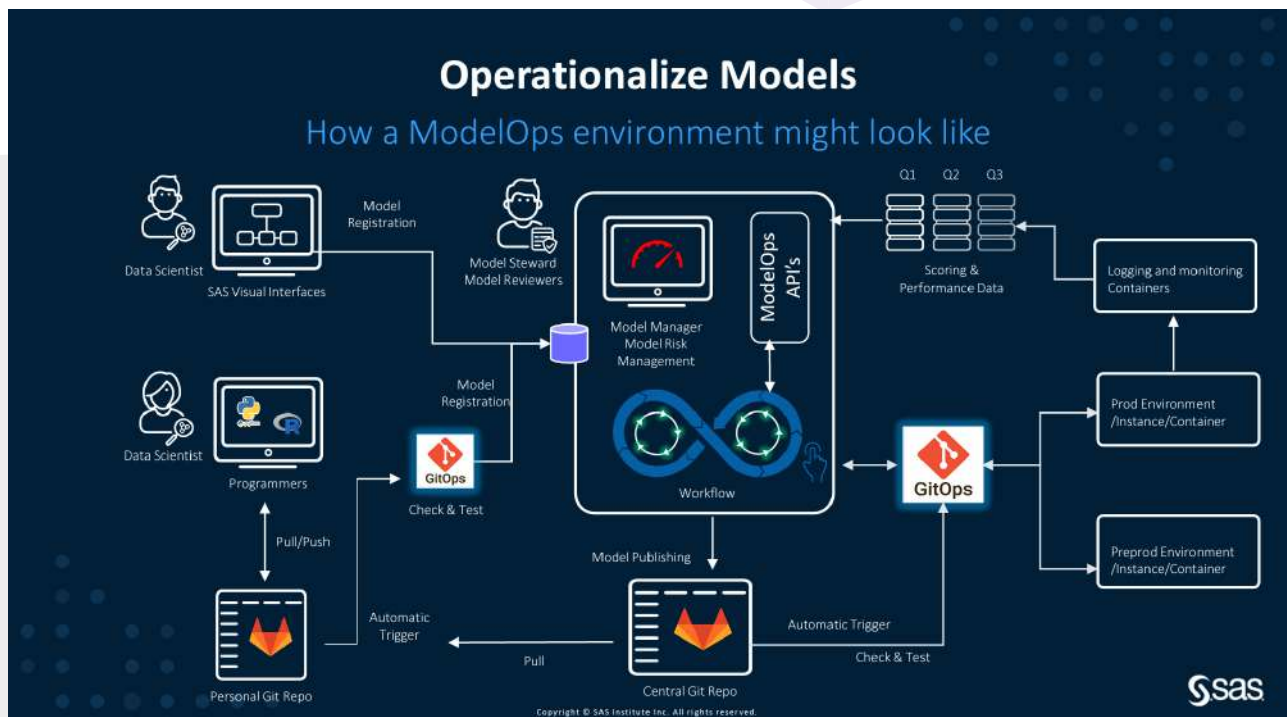
In closing the presentation, Mr Seifi emphasised the importance of transparency and ethics in the development of AI solutions, particularly in sensitive areas such as border management, internal security and migration. To that end, embedding responsible AI capabilities requires investing effort across all areas, including data privacy, model interpretability and bias detection, model transparency, as well as model governance and traceability.