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## STRUCTURE OF AN AUTOMATED RISK ASSESSMENT SYSTEM

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### **Abstract**

In this study, the relevant problem of risks and threats in the digital environment of modern society that can hinder business processes and effective cooperation with clients in organizations and companies is considered. To solve this problem, the creation of a software system for automating financial risk verification is proposed. The developed system has a monolithic architecture, which is divided into virtual modules, providing a certain level of separation of functions and system components. The API interface module ensures integration with third-party systems, and the asynchronous communication module with clients allows the system to send and receive messages in real-time. The main results of the work include the creation of a functional and reliable service for companies with the ability to effectively verify clients before starting cooperation with them, which will contribute to ensuring security and risk minimization.

**Key words:** *automated risk assessment, software system, digital environment, business processes, client verification, security, risk minimization.*

### **Introduction**

An automated risk assessment system (ARAS) is a software application that is used to automate the process of risk assessment and monitoring. ARAS can help organizations identify, assess, and mitigate the risks they face.

### **Components of ARAS**

A typical ARAS consists of the following components:

- Risk database: This database contains information about all the risks that an organization faces. Risk information may include a description of the risk, its likelihood of occurrence, potential impact, and mitigation plans.

– Risk assessment module: This module is used to assess the risks identified in the risk database. The risk assessment module may use various methods, such as quantitative risk analysis or qualitative risk analysis.

– Risk monitoring module: This module is used to monitor risks and update information about them in the risk database. The risk monitoring module may use various sources of information, such as news, reports, and financial data.

– Report generation module: This module is used to generate reports on risks for management and other stakeholders.

### **Benefits of using ARAS**

ARAS can provide a number of benefits for organizations, including:

– Increased Efficiency: ARAS can help organizations automate the risk assessment and monitoring process, which can lead to significant time and cost savings.

– Improved Decision Making: ARAS can help organizations make more informed decisions about risks by providing them with better information about the risks they face. This information can be used to prioritize risks, allocate resources, and develop mitigation plans.

– Enhanced Transparency: ARAS can help organizations improve the transparency of their risk management process by providing leadership and other stakeholders with a clear view of the risks facing the organization. This transparency can help to build trust and confidence in the organization's risk management capabilities.

– Continuous Improvement: ARAS can help organizations continuously improve their risk management practices by providing them with data and insights that can be used to identify trends, track progress, and identify areas for improvement.

### **Challenges of using ARAS**

It is important to note that there are also some challenges associated with using ARAS, such as:

– Data Quality: ARAS is only as effective as the data it is based on. It is important for organizations to ensure that the data in their risk database is accurate and up-to-date.

– Model Accuracy: The risk assessment module of ARAS relies on models to assess risks. These models can be complex and may not always be accurate. It is important for organizations to validate the models used by their ARAS.

– Human Oversight: ARAS should not be used to replace human oversight in the risk management process. ARAS is a tool that can be used

to support risk management decisions, but it should not be used to make decisions on its own.

In the active digital environment of modern society, there are various threats and risks that can hinder business processes and effective cooperation with clients in organizations and companies. These can be financial or reputational risks associated with interaction with new clients. With the growth of international trade and investment, companies have more financial risks associated with payments, credits, and currency operations. The increase in cyber threats necessitates reliable protection of information and client data. Therefore, companies that possess effective risk assessment automation systems can attract more clients and provide a higher level of service. All these factors determine the relevance of the research topic and the need to develop software systems for automating risk assessment.

The software system we have created is monolithic and divided into virtual modules: the API interface module for integration with third-party systems; the asynchronous communication module with clients; the module for working with the LexisNexis system; the module for working with the MaxMind system; the module for working with the Persona system; the decision-making module; the business logic module of the service; the analytics module; the email communication module; the API documentation generation module. This architecture combines the advantages of monolithic architecture and modular organization, providing a certain level of separation of functions and system components. Clients of the system can customize their solutions and communicate with the developed system through the API interface module. The asynchronous communication module with clients, built on the basis of webhooks, allows the system to send and receive messages in real-time.

### **Conclusions**

ARAS can be a valuable tool for organizations of all sizes. By automating the risk assessment and monitoring process, ARAS can help organizations identify, assess, and mitigate the risks they face. This can lead to improved decision making, increased efficiency, and enhanced transparency. However, it is important to be aware of the challenges associated with using ARAS and to take steps to mitigate those challenges

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