Quantori's Mission to Empower Orion on Its Journey to Build a Scalable Research Data Platform for the Modern AI Age

Solman Rahman
Executive Vice President

Alexander Rusov
Senior Director, Solution Delivery

Meet the Team

Solman Rahman

Executive Vice President

o Responsible for corporate development and client portfolio in EU region

o 20+ years experience in data management, data science, digital transformation and technology consulting.

o Formed strategic and mutually benefical relationships with leading global pharma, healthcare and biotech companies.

Alexander Rusov

Senior Director, Solution Delivery

o Responsible for solution design and service delivery in Nordics and Baltics region.

o Expertise in digital platform development, data engineering, Big Data, AI/ ML technologies and software development.

o Skilled in programme management and delivery assurance of mission-critical engagements.

Quantori

is a Scientific Informatics, Technology Solutions, and Digital Transformation Partner for the Biopharma, Life Sciences, and Healthcare industries.

Our deep domain-focused approach harnesses the power of AI, Machine Learning, Data Science, Software Engineering, and Cloud Scaling to support our clients accelerate their efforts towards speed to market of drug design & development.

Expertise, Experience, and Scale

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Blue-Ribbon Client List

Leading BioPharma, Life Science, and Healthcare companies and Research institutions.

1500+ Projects

Life Science platforms, systems, applications and tools development covering the continuum from Early Stage Discovery, Clinical, RWE, Commercial.

Proven Track Record

Successfully undertaken digital transformation projects, delivering innovative AI/ ML solutions, managing mission critical delivery programmes.

700+ Experts

Domain Specialists (Scientists, Researchers, Clinicians), Data Scientists, AI/ ML/ Automation Experts, Software & Cloud Engineers.

7 Global Locations

Key offices and development centres in Armenia, Georgia, Kazakhstan, Portugal, The Netherlands, Finland, the UK, and the US.

20+ Years

Extensive experience in developing solutions for research-driven Life Science and Healthcare sectors.

Key Expertise Areas

Laboratory Informatics

Scientific Informatics

Data Science & Engineering

Cloud Operations

AI & Machine Learning

RWE & Registry Science

Real World Informatics

High-Performance Computing

Industry Context:
Building a Fast-lane to Novel Therapies

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Reducing time from idea to market by several years

Currently, the process of bringing a new drug to market spans **over 15 years with a low success rate.**

Research	Exploratory Development	Confirmatory Development

70% success

Phase I 50% success
Phase II 30% success

Phase III 55% success

In the future, through optimal utilization of data and AI within the ecosystem, the timeline for bringing a new drug to market could be **reduced to less than 10 years, with an improved success rate.**

Research	Exploratory Development	Confirmatory Development

Our Solution Approach
Discovery Assessment Insights

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We undertook an initial Discovery Assessment, which gave us insights and findings of the "As-Is" state and guided the path to discussions with Orion's senior stakeholders of the "Target" state (what new the Research Data Platform needed to deliver in terms of executing the vision, platform design and functionality).

Technical Challenges

Data Silos

Disconnected information systems within and across various labs & teams

→ Difficult to access and share information

Inconsistency

Various practices and formats to collect and manage the data

→ Data integration and analysis is complicated

Diverse requirements of each function

→ Tailored, non-standard data management solutions

Integration Challenges

Limited metadata management, use of ontologies, and standardized vocabularies

→ Difficulties integrating existing systems

Manual Processes

involved in routine data processing

→ Error-prone and inefficient

Harmonization

Diverse requirements of each department, necessitating tailored data management solutions to address their specific needs.

→ Non-standard ontologies/vocabularies in use involved in routine data processing

New Research Data Platform: Goals and Objectives

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Transform Data Silos to Integrated Data

The aim is to implement a centralized, easily accessible platform that streamlines data access and sharing across all departments. This will replace existing data silos and enable staff to access all data assets effortlessly.

Data Transformation to Unified Data Models

Develop the platform's capability to harmonize varied data formats and management practices. This simplifies data integration and enables advanced analytics. The platform will employ a unified data model that leverages ontologies, standardized vocabularies, and other metadata to ensure interoperability among different data types.

Optimize Storage and Retrieval Systems

Extend the existing system with an advanced, efficient storage solution. This will speed up file-sharing services and improve data retrieval times.

Automate Data Catalog for Efficiency

Introduce automation features to eliminate manual work, thereby increasing employee efficiency and enhancing the user experience.

Provide a Unified Approach to R&D Data Management

That encompasses the collection, storage, transformation into a unified data model, and the application of advanced indexing and searching mechanisms.

Ensure Long-term Support and Scalability

Build a platform designed to evolve, with the goal of providing long-term technical support and updates, thereby moving away from the possible limitations.

Unified Research Data Model

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F A I R

Findable	**Accessible**	**Interoperable**	**Reusable**

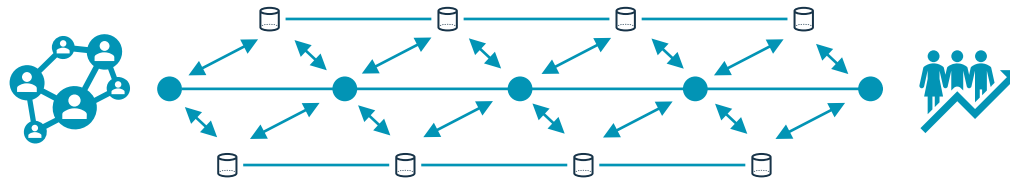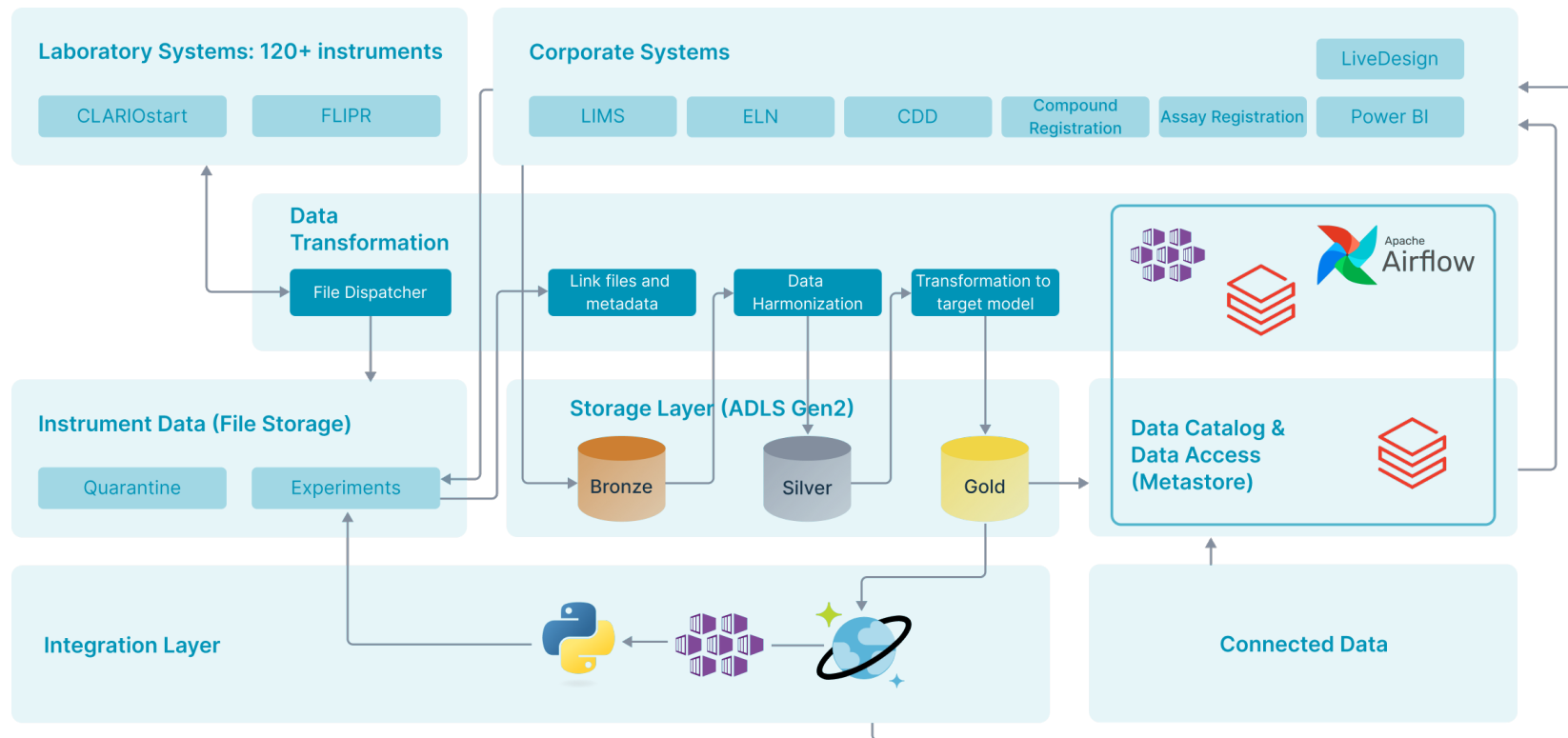all data searchable within one platform   no data hidden in silos   harmonized metadata and IDs   all relevant metadata available

- Well-linked data enables answering questions that require combining different data types and concepts → building knowledge. It also enables advanced analytics/visualizations and ML/AI.

- Well-defined APIs and standard formats and vocabularies allow the integration of different external and internal data sources efficiently. Each data source needs to be integrated only to one place.
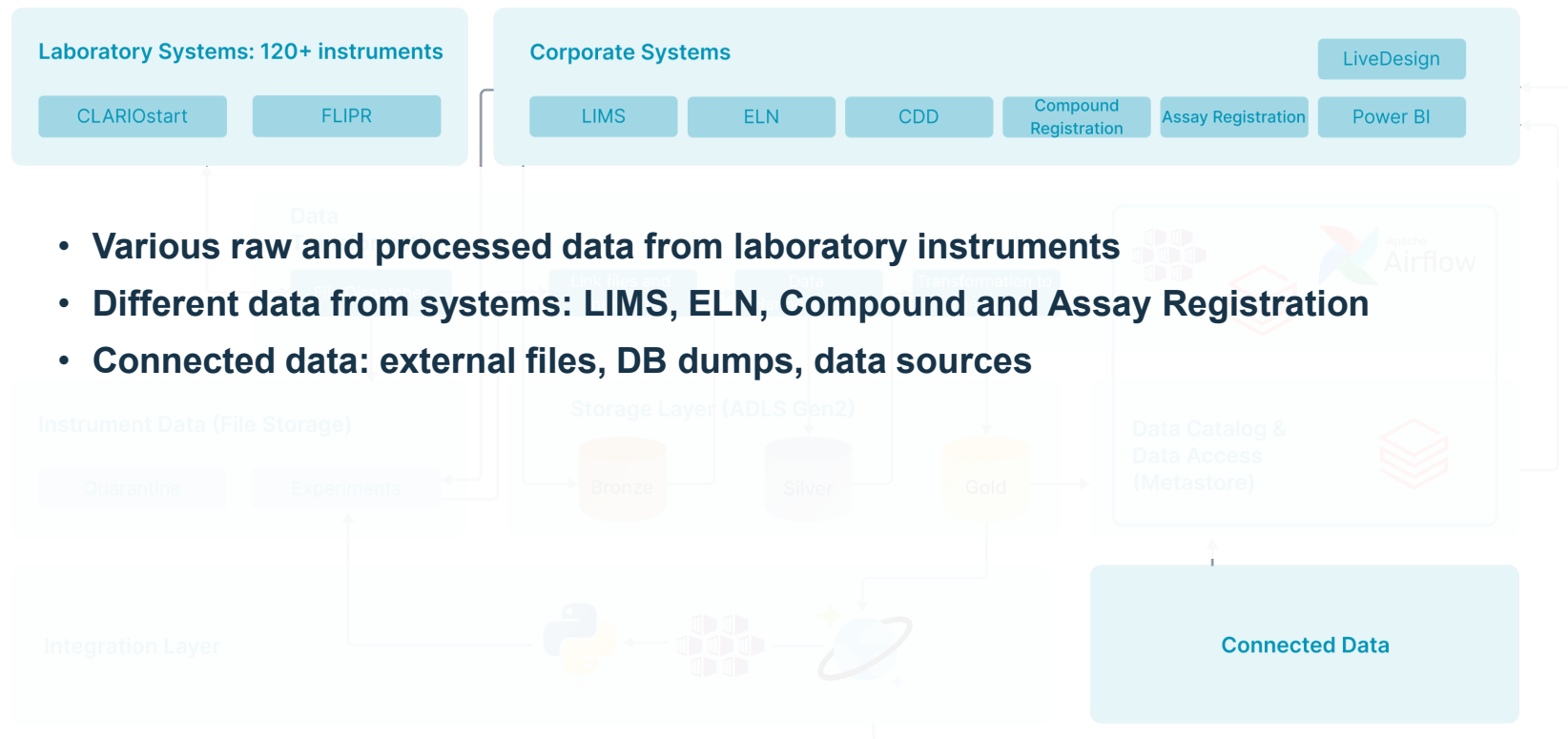
- Efficient traceability of all experimental data related to any entity → no wasted time looking for relevant data in different reports & databases.

- Possibility to integrate project teamwork and workflow/worklist management in one place → visibility & transparency.

- Modern cloud-based platforms come by default with scalability, connectivity, security & ease of maintenance.
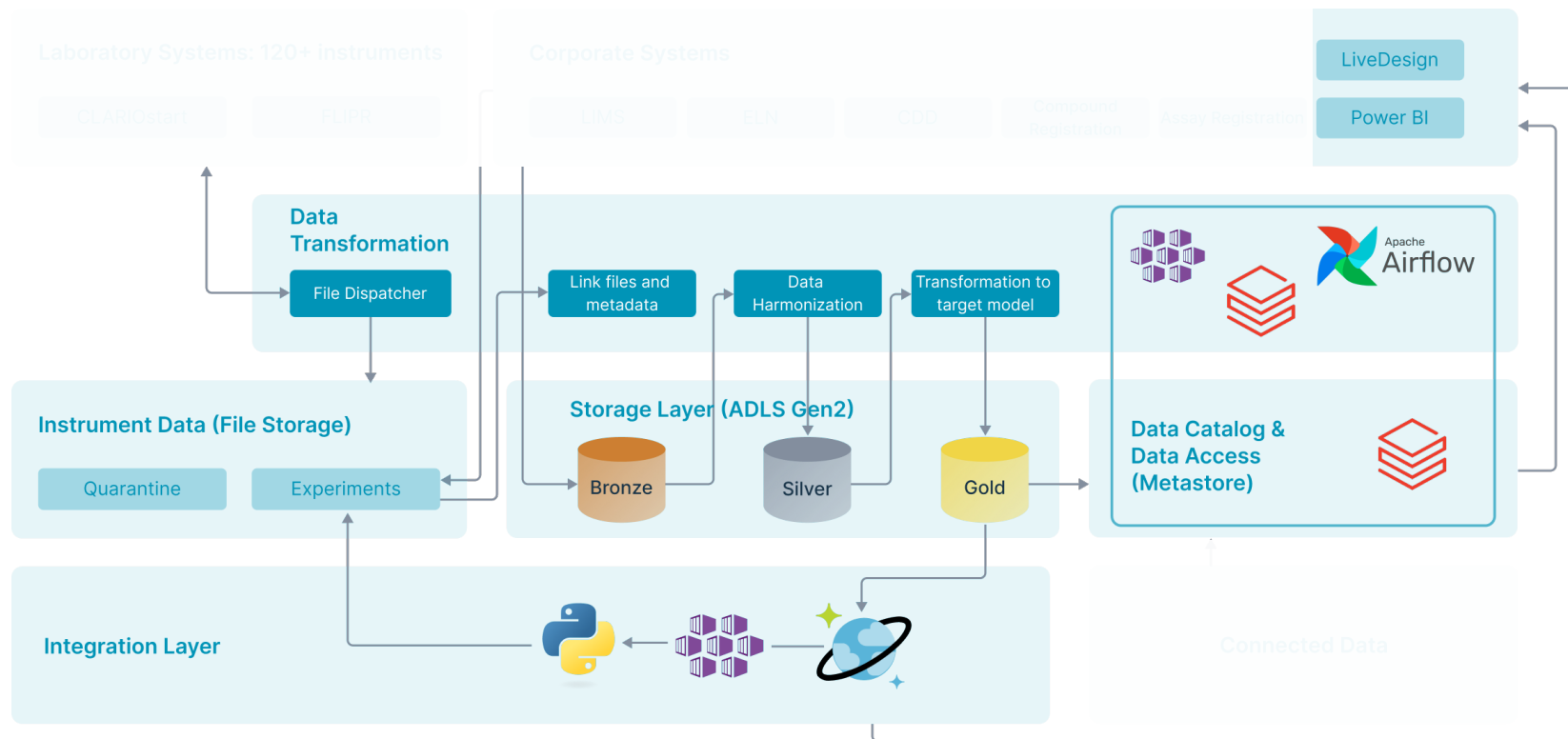
Technical Solution

Technical Solution

Laboratory Systems: 120+ instruments

CLARIOstart   FLIPR

Corporate Systems

LiveDesign

LIMS   ELN   CDD   Compound Registration   Assay Registration   Power BI

- **Various raw and processed data from laboratory instruments**
- **Different data from systems: LIMS, ELN, Compound and Assay Registration**
- **Connected data: external files, DB dumps, data sources**

Connected Data

Technical Solution

Laboratory Systems: 120+ instruments

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Data Transformation

File Dispatcher

Instrument Data (File Storage)

Quarantine   Experiments

Integration Layer

- **All files from instruments should be moved to Cloud File Share**
- **All moved files should be linked to the corresponding experiment**
- **Meta Data is stored and searchable**

Technical Solution

Roadmap

New data sources and use cases related to data products.

Utilization AI and ML technologies.

Onboarding of new areas of research.

Summary

Successful ingredients to build the solution together with the partner:

Besides technical project focus, change process and management as well as cultural empathy are critical.

Orion team is very inclusive involving us at every stage. One team mindset.

Tight collaboration between different teams (senior stakeholders, research and technical).

Thank you!
Kiitos!
Danke!
Merci!