

PROTOTYPE: DIGITAL DATA MARKETPLACE

Enabling Data Sharing for AI Development

Leon Gommans – Science Officer

Air France KLM Group IT Technology Office
R&D department.

Prof. Data Exchange Systems
Informatics Institute
University of Amsterdam

Research
Projects



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 709288



UNIVERSITEIT VAN AMSTERDAM

SURF



ESnet
ENERGY SCIENCES NETWORK



DELL Technologies

NOKIA

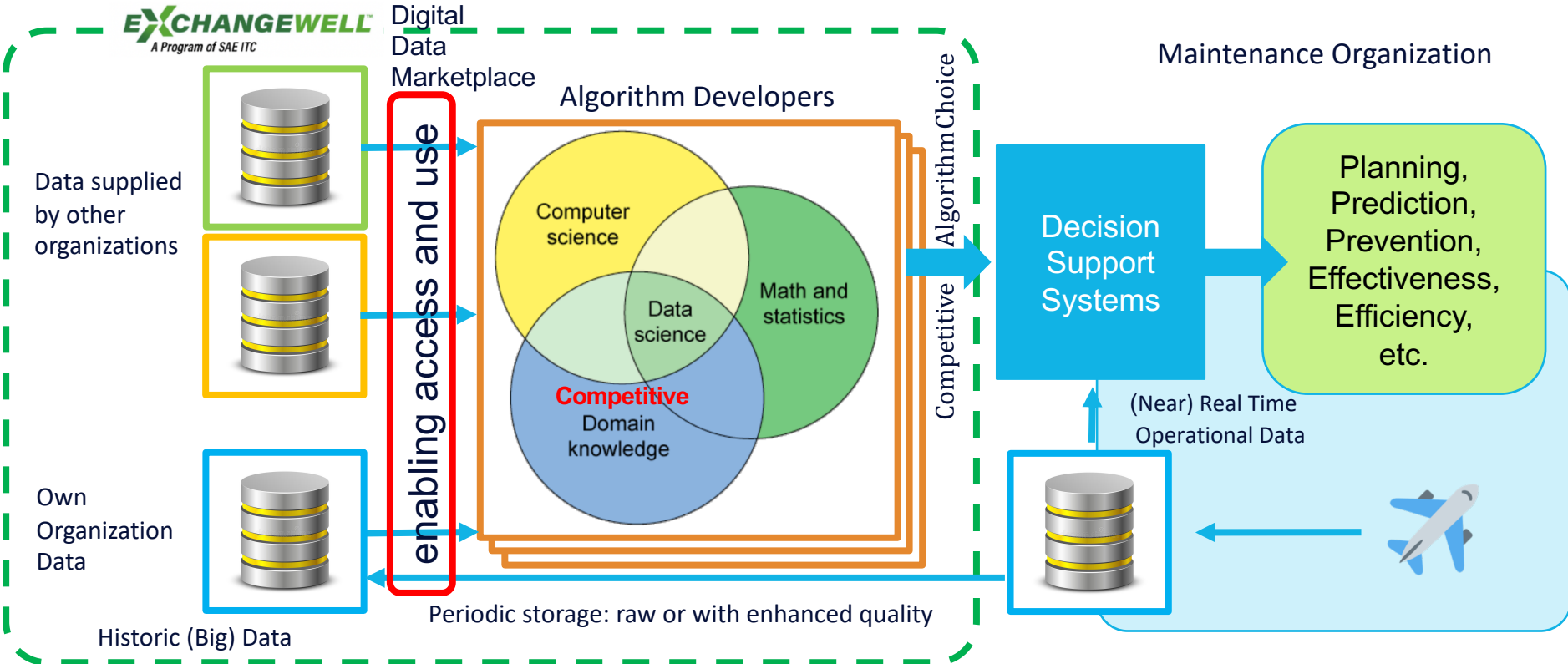
ciena

EXCHANGEWELL
A Program of SAE ITC

Industry

CHALLENGE: SHARING DATA FOR AI DEVELOPMENT

SOLUTION: DIGITAL DATA MARKETPLACE GOVERNED BY A MEMBERSHIP CONSORTIUM



DIGITAL DATA MARKETPLACE GOVERNANCE

A FOUR STEP APPROACH:

SAE ITC ExchangeWell

Testbed Equinix/Dell/
Nokia/Ciena



COMMON BENEFIT

Define and agree common benefit no single organization can achieve on its own.



GROUP RULES

Define consortium rules considering data use, access and benefit sharing



ORGANIZE TRUST

Organize power and trust as a **means to reduce risk** for participating members

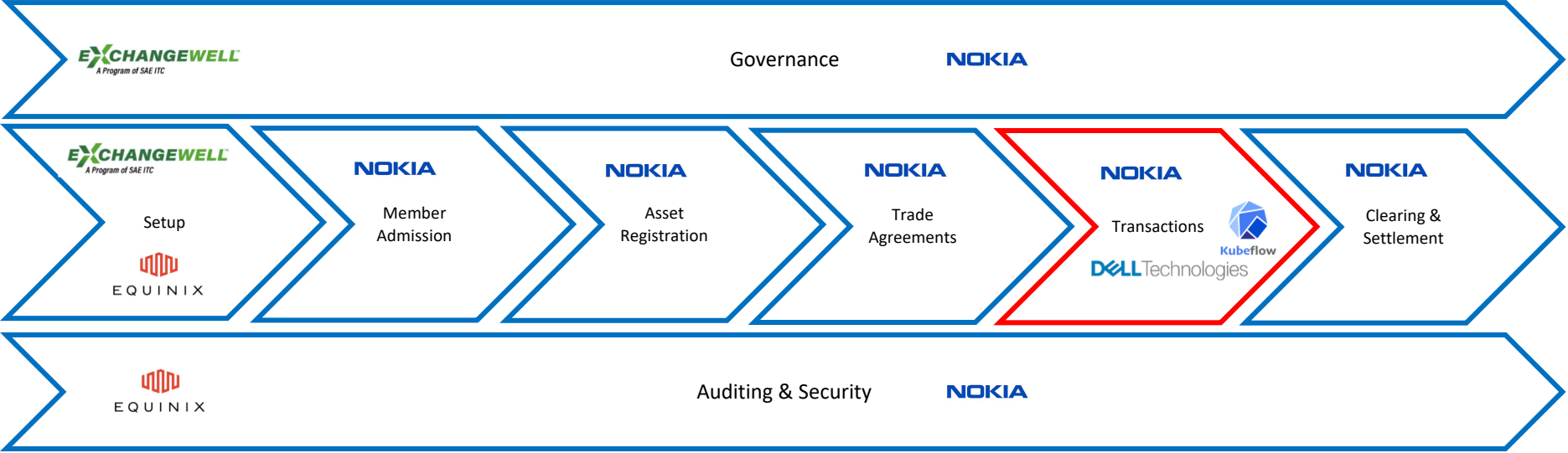


IMPLEMENT INFRASTRUCTURE

Research operationalization of **Digital Data Marketplace** concepts

MARKETPLACE JOURNEY

IMPLEMENTED IN PROTOTYPE



MEMBERS ALLOW EACH OTHER VISIBILITY

AI flow Data/Algorithm



Datapace

Dashboard

Sell stream

Buy stream

Smart contract

Access control

AI

My wallet

manu@gmail.com
0 DPC

AI

+ Add Algorithm

+ Add Dataset

+ Execute

Algorithms

	Name	Type	Price	
<input type="checkbox"/>	MyMetaAlgo >	Algorithm	0.45 DPC	edit delete

Choose Algorithm

< Previous

1 2 3 4

Next >

Datasets

	Name	Type	Price	
<input type="checkbox"/>	publicManu2Stream >	Dataset	0.67 DPC	
<input type="checkbox"/>	dsfsdfds >	Dataset	0.44 DPC	edit delete
<input type="checkbox"/>	MyMetaData >	Dataset	0.44 DPC	edit delete

Choose DataSet

Jobs Queue

ID	Mode	Algo	Data	State
5c780634afdade0001a0d3a5 >	federated	mySuperAlgo	pu-Dataset	executing
5c7a6f31afdade00013a4f31 >	centralized	lococo	propoprotettd	executing

Log tracking, execution tracking

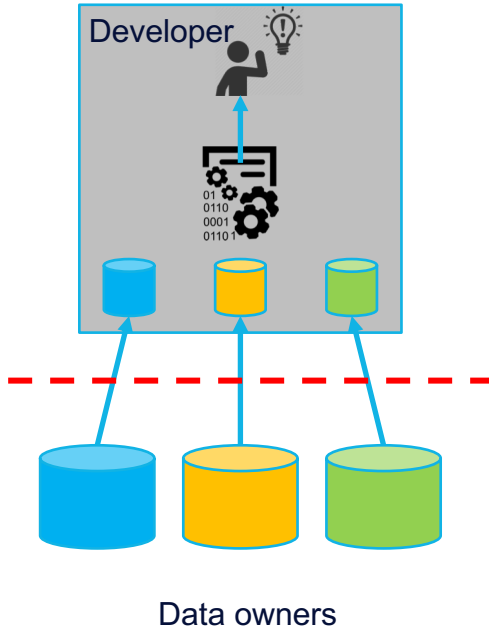
Dec 2018 Mar 2019 Mar 2020

ESSENTIAL INFRASTRUCTURE ARCHETYPES

MANY VARIANTS: FOCUS ON CONSORTIUM DRIVEN APPROACH TO ORGANIZE TRUST

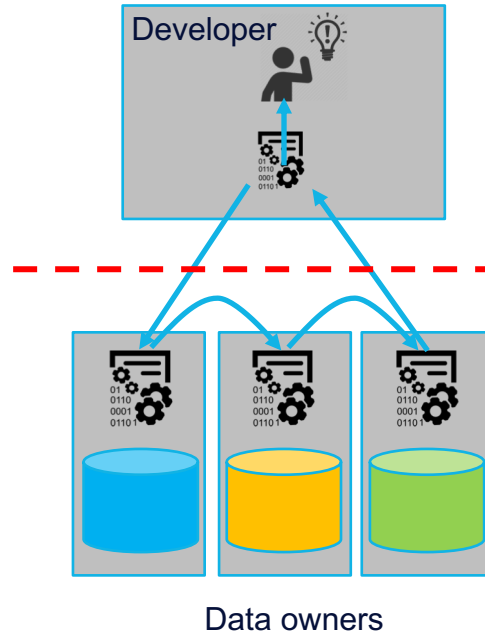
Centralized

Bring data to the algorithm



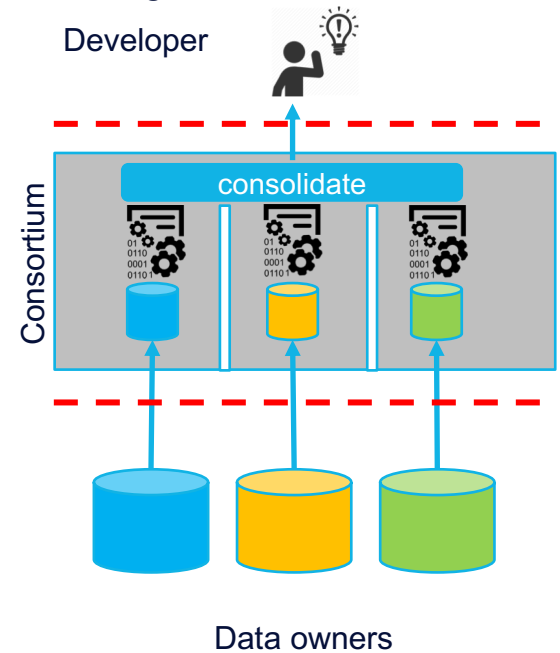
Distributed

Bring algorithm to the data



Federated

Using trusted infrastructure

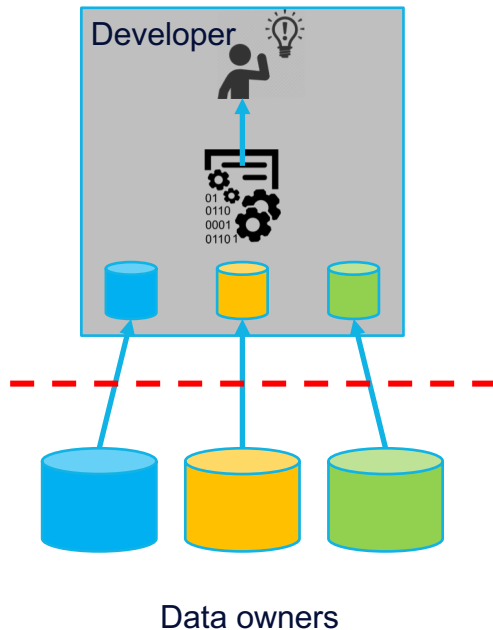


ESSENTIAL INFRASTRUCTURE ARCHETYPES

PROTOTYPE: CONSORTIUM DRIVING SECURITY & INFRASTRUCTURE ARCHITECTURE

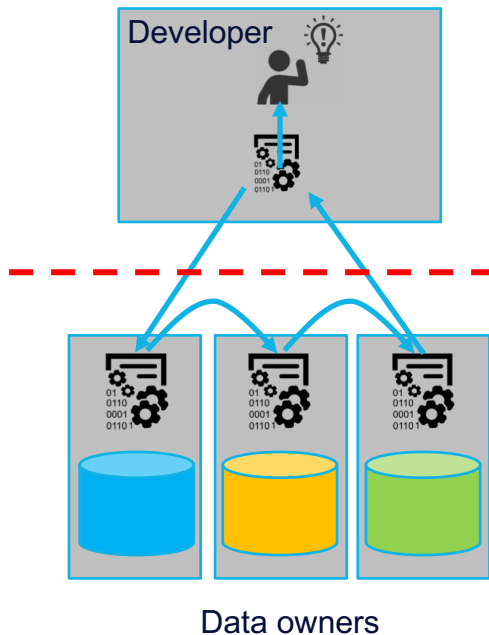
Centralized

Bring data to the algorithm



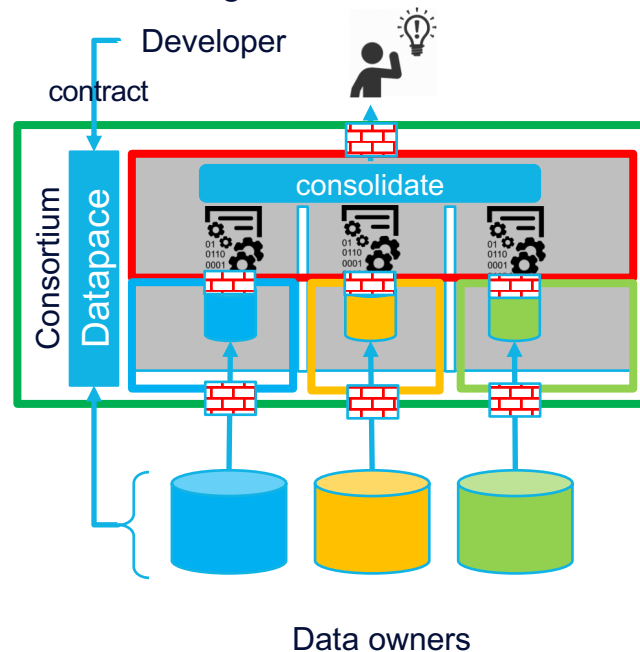
Distributed

Bring algorithm to the data



Federated

Using trusted infrastructure



DIGITAL DATA MARKETPLACE ARCHITECTURE

RESEARCHING IMPLEMENTATION OF ESSENTIAL ELEMENTS

