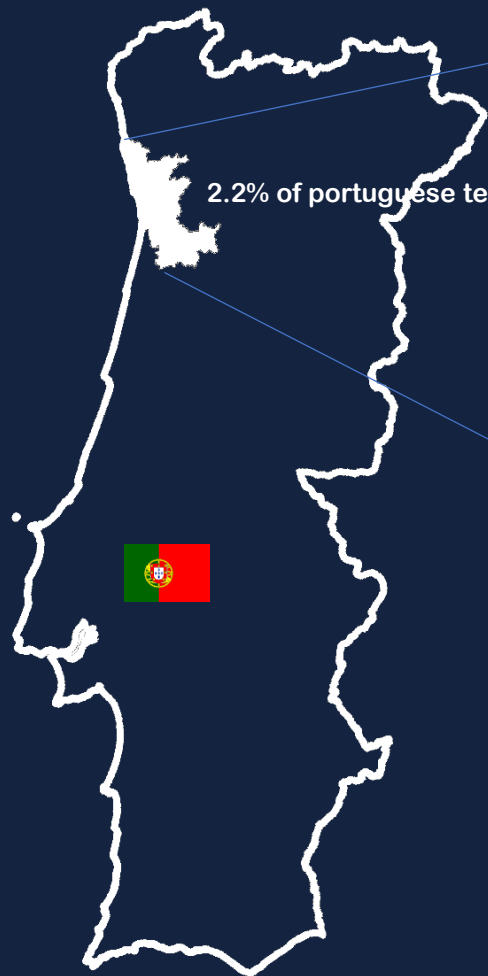




Building a NeTEx model in
Portugal
(starter case example)...



.....where



Metropolitan Area of Porto

2.041 Km²

1,76 million people

76 thousand university students

20% of portuguese university students

17 municipalities

póvoa de varzim

vila do conde

trofa

santo tirso

maia

matosinhos

valongo

paredes

porto

gondomar

vila nova de gaia

espinho

santa maria da feira

arouca

são joão da madeira

oliveira de azeméis

vale de cambra



.....who



bus internal operator



metropolitan internal operator



COMBOIOS DE PORTUGAL

urban train service operator

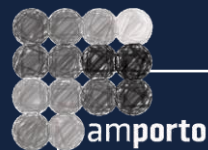


Transportes Intermodais do Porto

Ticking system service metropolitan operator



ANDANTE – Metropolitan ticket card for intermodal mobility...



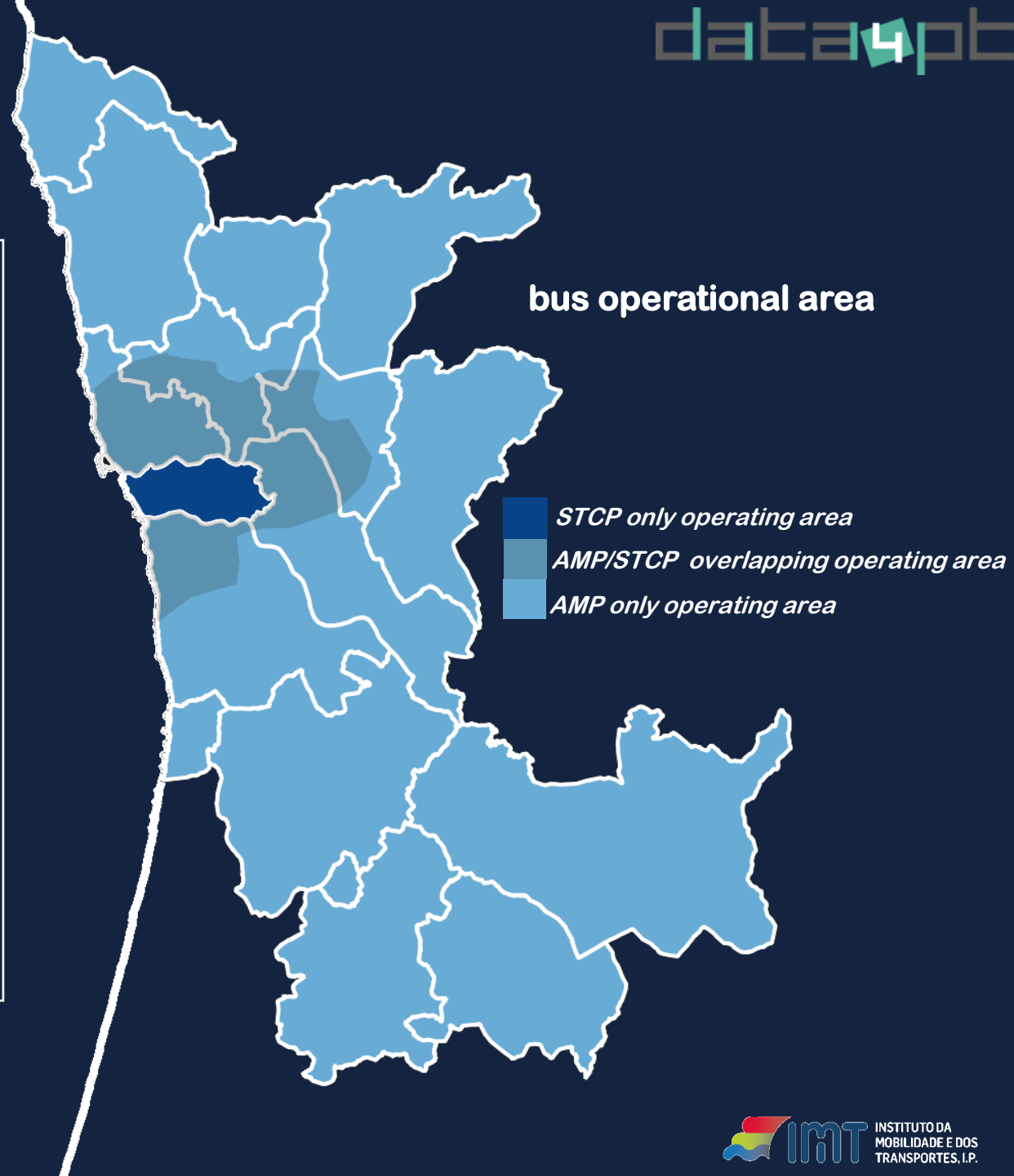
now

Controlling the concession of **22 Bus operators**
590 lines
Operator monomodal ticket system

future (2023)

Controlling the contract of **5 bus operators / networks**
(439 lines)
Metropolitan multimodal ticket system

Operator obligation to communicate static information in NETEX and real time information in SIRI





.....what

Our Mission

Needs identification

Planning (lines, intercommunications ,
frequencies , coverages ...)

Establishment of service requirements

Establishment of ticket, fees, prices, ..

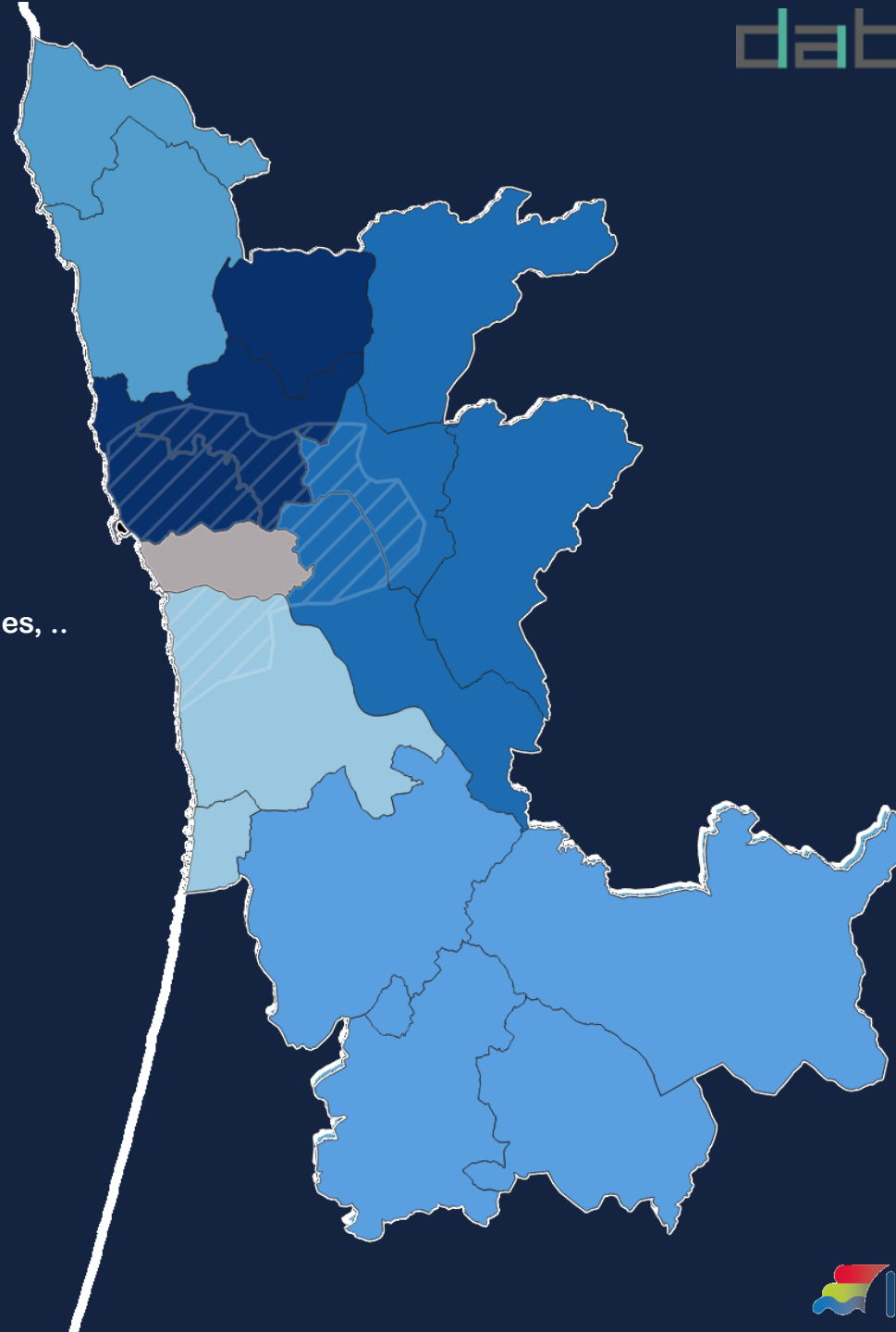
Contracts

Services monitoring

Payments of contract obligations
(bonus - malus)

Public Information
(not direct ,to other entities public or
private that can better integrate
information)

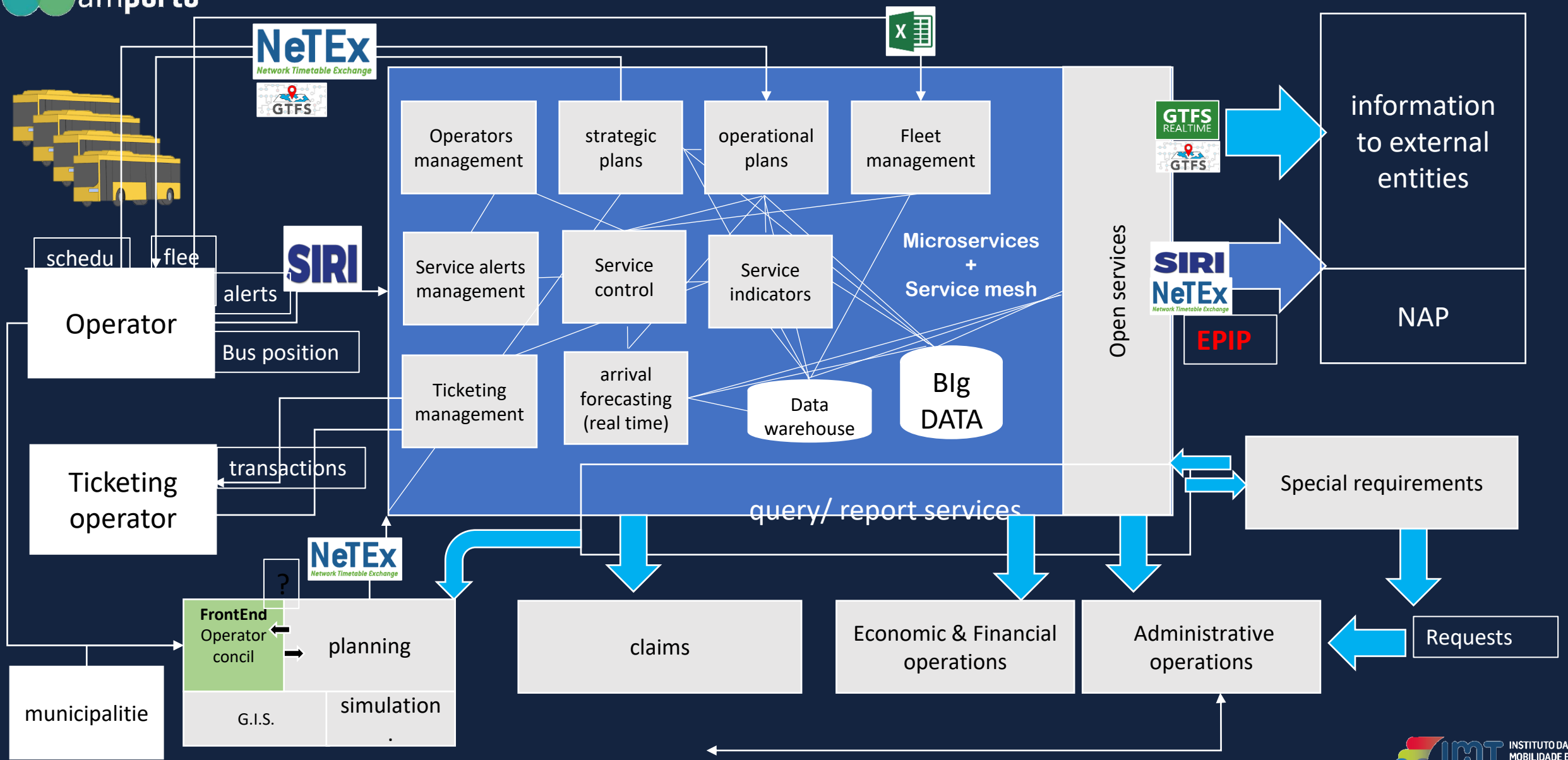
Bus service by
private
operators





.....what

monitoring and controlling platform



strengths

wide cover of the transport system areas

object oriented data model

frame concept

versioning mechanism

transmission as payload or a file

Portuguese NAP standard (imtt)

full European standard since 2006

weaknesses

complexity

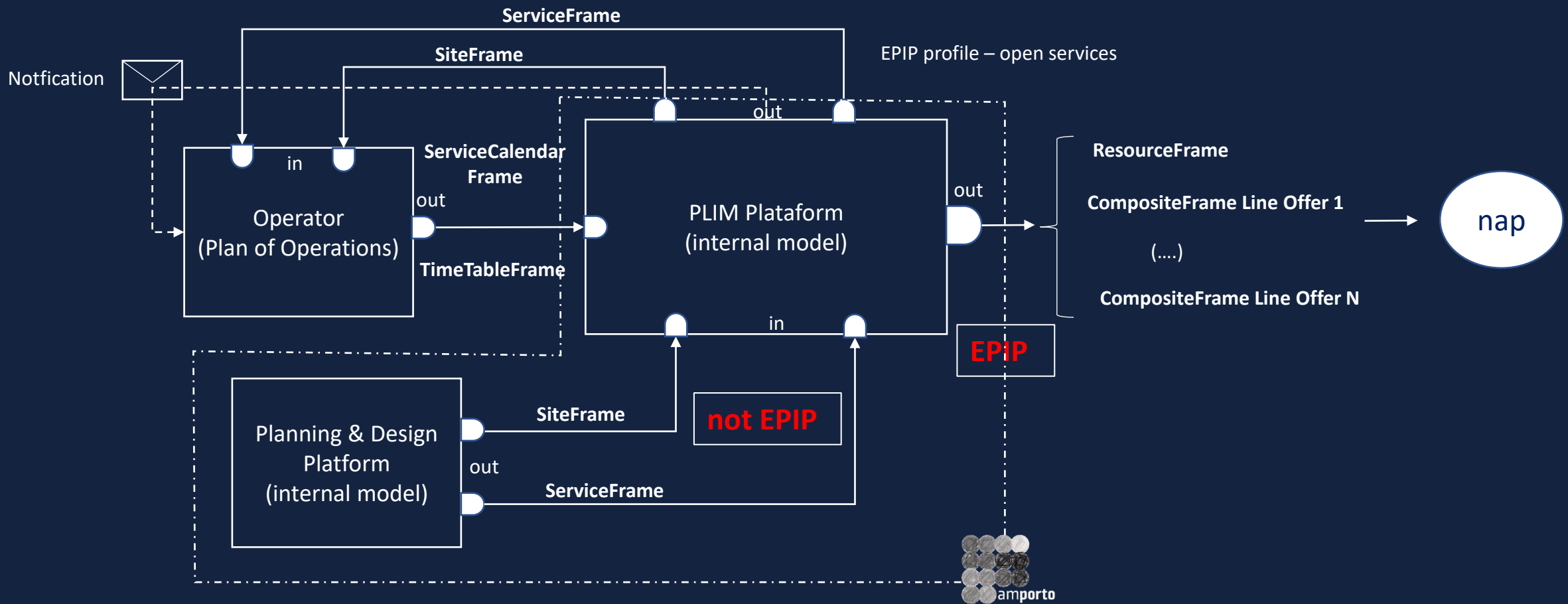
small presence in commercial software as input format

Netex files can be huge

.....how

Flux diagram of NeTeX exchange

(use of frames)





.....how

data4pt

tools

Training Material

DATA4pt Expert Team support

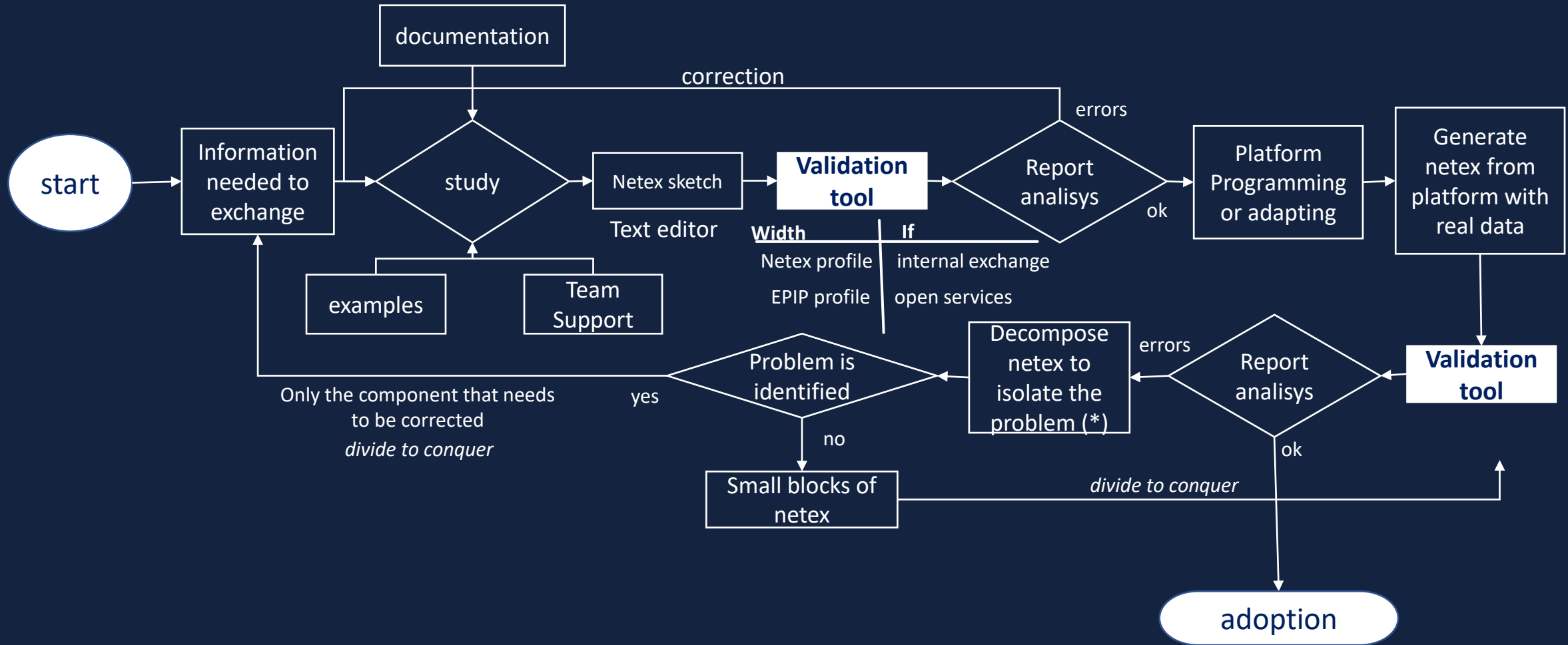
Examples from others

Graphic interactive documentation of NeTEx XSD adapted to EPIP profile

Data validation tool

(Docker version)

Flux diagram process to produce the NeTEX model (tools use case)

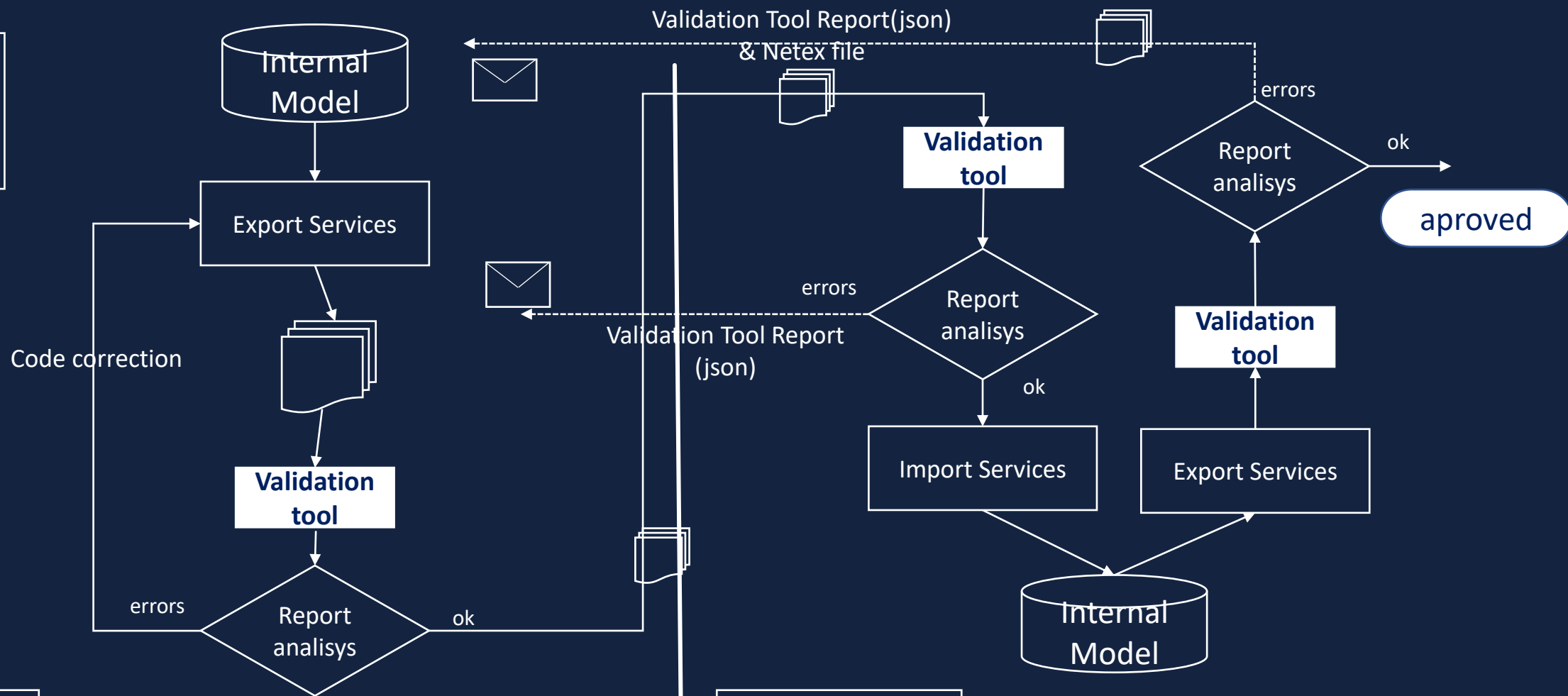


*- Netex files could become very big

.....how

Flux diagram to test functions (devops use case)

Generate netex from platform with real data



Planning & Design Platform



Internal development Team

PLIM Platform

External development Team

notes

netex

Technical manual with all prevalent information written for starters with concepts, examples, etc.

validator

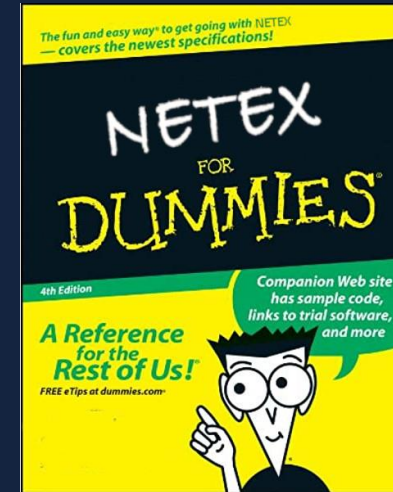
The profile with which the file was validated included in report

nap ecosystem

How can an app use the NAP model(to discover, to connect and consult ...) ?

There is any identified security risk in NAP model that could be exploited?

If yes is there any common security model ?



In name of:



and



THANK YOU FOR YOUR ATTENTION
(Kindness and patience)



The dummy