Are existing European Services ready?
Towards a European PID Service

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ePIC
Persistent Identifiers for eResearch

GWDG

- is computer center of the University of Göttingen
- and competence center for the Max-Planck-Society

- Tasks
  - Provider of IT Services
  - HPC at HLRN
  - Competence and Consulting Center
  - Research Facility

- Figures
  - Founded 1970
  - > 130 Employees
  - Customers
    - 84 Institutes (MPG)
    - > 200 Institutes (Uni Gö)
    - about 60.000 Users

GWDG
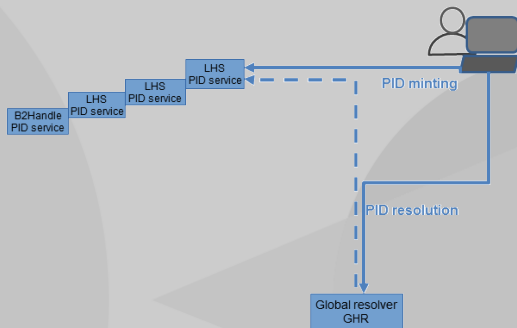Are existing European Services ready?

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FAIR-DO Landscape in Europe
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Questions

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PID from the user viewpoint

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Digital Object Numbering Authority
DONA

DONA governs the Handle structure at the top level in close collaboration with ITU

- the Multi Primary Administrators (MPAs) build the distributed Global Handle Registry (GHR)
- DONA is a Swiss foundation hosting an international consortium
  - DONA was founded 2012 in Geneva
  - currently 8 credentialed MPAs
    - CNRI(USA), CHC(China), GWDG(BRD), IDF(DOIs), CITC(Saudi Arabia), SAA(Afrika), MISADI(South Afrika), Rostelecom(Russia)
  - ITU is involved as partner
  - GWDG is MPA on behalf of ePIC
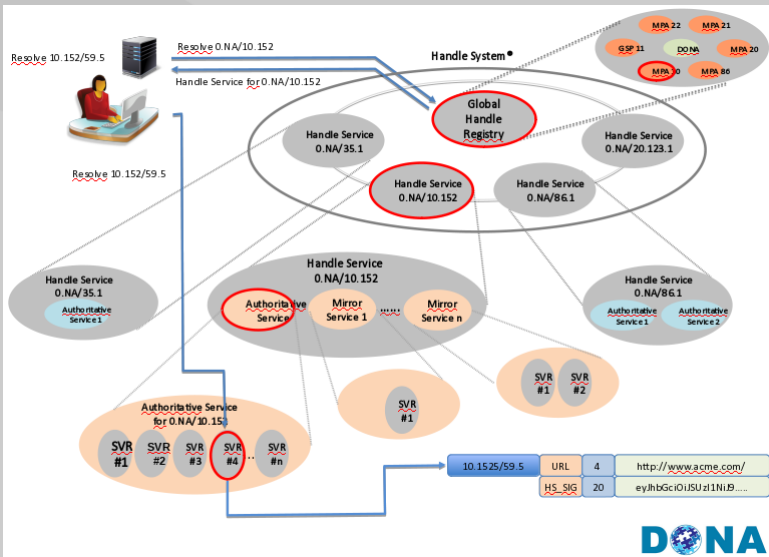 - The DONA consortium will moderately grow in future

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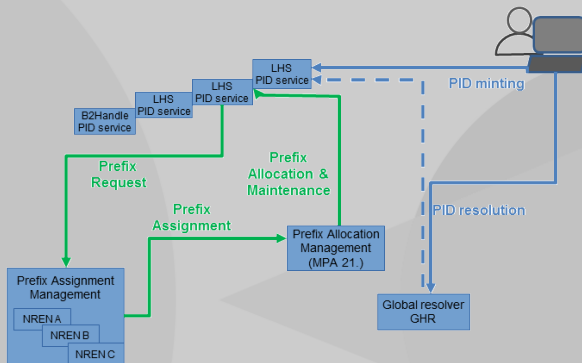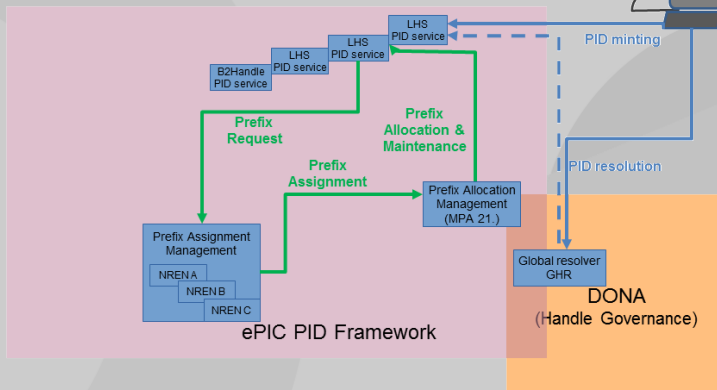# Global Handle Registration

Christophe Blanchi, DONA, 2019

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Prefix Managements - behind the Scenes

ePIC PID Management

The **ePIC** *Persistent Identifier Consortium for eResearch*

- is a network of currently eight strong scientific service providers that signed a contract,

- to **ensure a reliable and persistent identifier infrastructure**,

- devoted to the needs of the research community at large.

- Quality of Service

- **Mayor focus**: referability
  - for sharing data during the research process
  - with finer granularity and
  - PID coupled metadata

The ePIC Infrastructure

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- ePIC can provide prefixes with GWDG as DONA MPA
- ePIC PIDs have a high availability
  - members run local handle server (LHS) with two mirrors inside the consortium
- ePIC plays an important role for the global handle system
  - global handle registry (GHR) mirror and
  - handle resolution proxy (both run by GWDG, first outside USA)
  - both improved significantly the average resolution time for European customers
- diverse implementations and backend configurations in ePIC

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ePIC Infrastructure in Numbers

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- ePIC PIDs
  - ePIC has minted already more then 80 million PIDs
  - uses currently about a hundred prefixes
  - one has more than 25 million, one almost 15 million, five more than 2 million PIDs.
- Handle Minting Performance
  - generic setup with SQL-DB: 50 Handles/sec
  - concurrent setup with Berkeley-DB: 200 Handles/sec
  - tuning up: 10000+ Handles/sec
    - see http://www.handle.net/performance.html
- Handle Global Resolution Performance (using UDP)
  - latency single PID: 25 - 500 mSec
  - latency 1000 PIDs: 500 - 1000 mSec

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ePIC Services and Governance
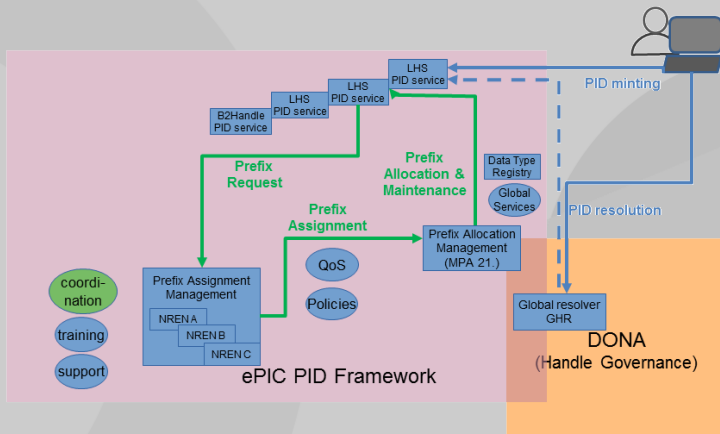
Policies and Quality of Service in ePIC

- Conditions of Operation
  - user management, privacy protection and secrecy
- incident management and monitoring
- support system with agreed responsabilties
- certification of ePIC PID services
- several policies for PID minting and update agreed
  - others are still under discussion
- quality of resolution
  - audits can be requested
- community dependend policies (on prefix level)
- ePIC members provide PID services for their customers
  - implementation of an ePIC Data Type Registry
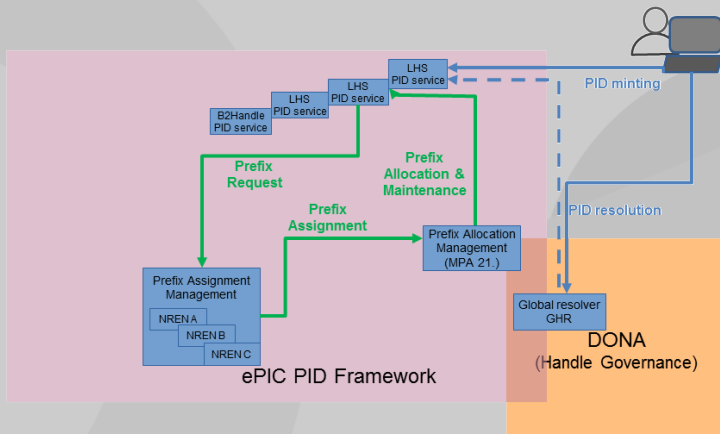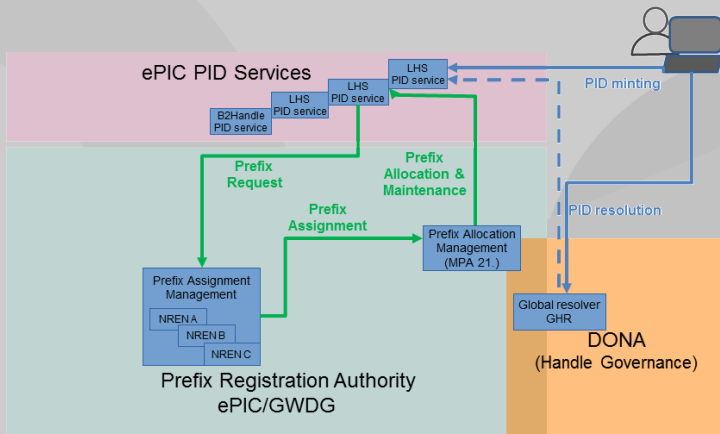 - implementation of an ePIC Collection Repository

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Policies and Quality of Service in ePIC

- Agreements between partners about
  - Resonsibilty for the long term commitment of PIDs
    - take over procedures in case of institutional failure
  - Conditions of Operation like user management, privacy protection ...
  - incident management and monitoring
  - support system with agreed responsabilities
- several policies for minting and updating PIDs
  - mandatory and optional data types
  - PID deletion (not) allowed
    - clear separation of production and testing PIDs
  - only use ASCII- or Hex-characters for suffix
  - get suffix or provide your own

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ePIC PID Management

ePIC Local Services and Global Governance

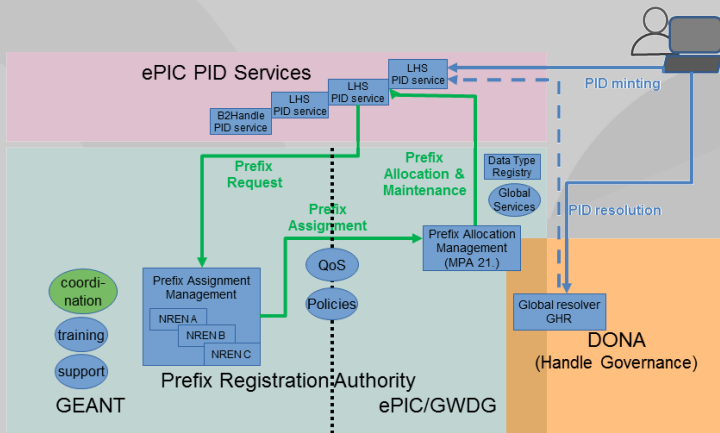# How GEANT comes into the Picture

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ePIC
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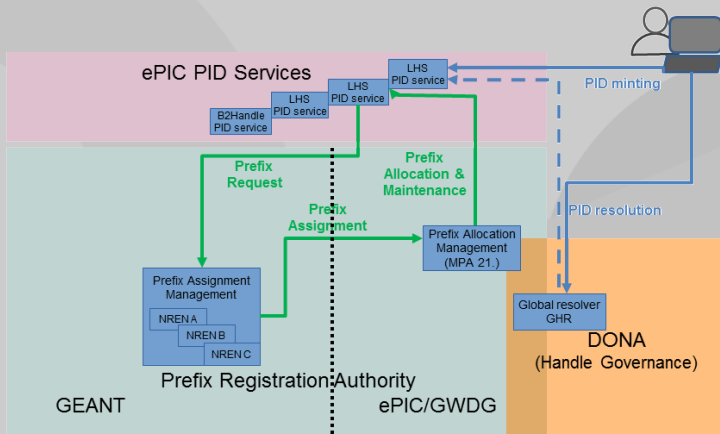Services
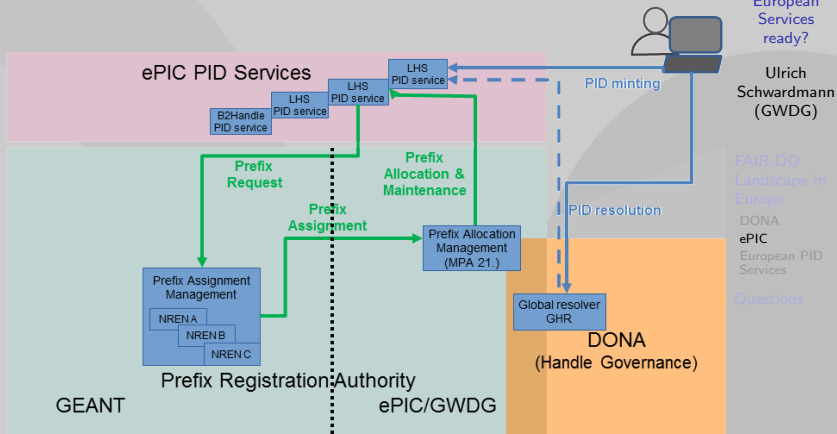
Questions

European PID Services and Governance

Other Services on Top
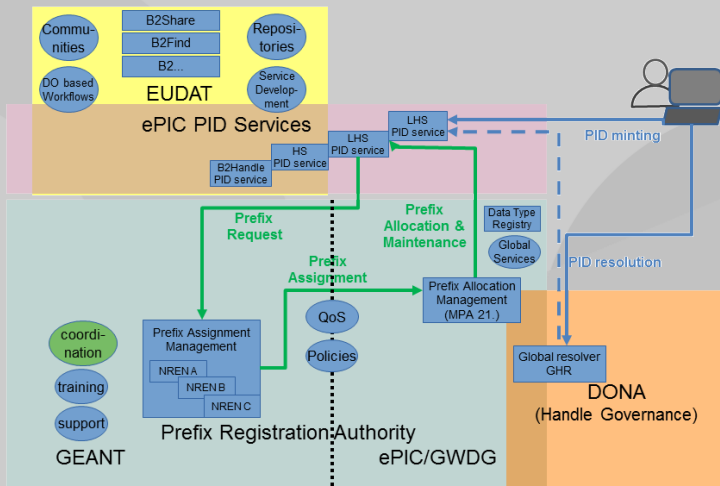
Cooperation with PID Service Providers
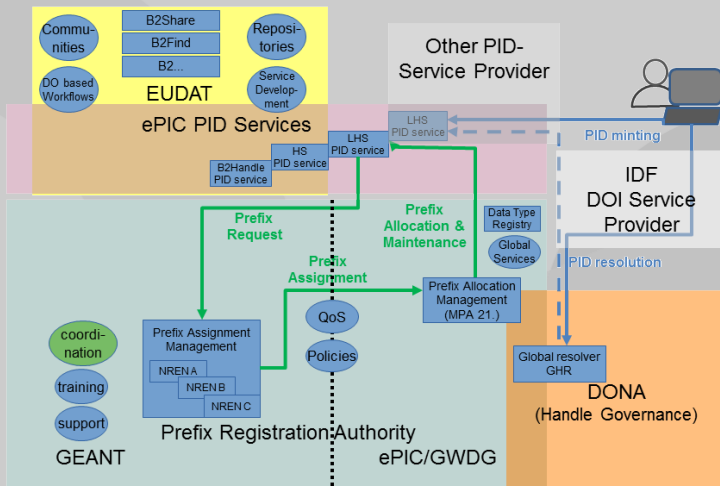
A European Prefix Registration Authority

Many Thanks

Questions ???

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