gasunie

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Report IGU Study Group 3.4
3.4CS.02

Rein Bolt
Chairman IGU SG 3.4

Title of IGU SG 3.4 report

A Guideline

"Using or Creating Incident Databases for Natural Gas Transmission Pipelines"

Members of SG 3.4

Enagas, S.A.	**Mr. Daniel Velez Vega**
Gassco	**Mr. Olav Rasmussen**
Gasunie	**Mr. Rein Bolt**
R&K Consulting	**Mr. Boris L. Krivoshein**
E.ON-Ruhrgas	**Mr. Achim Hilgenstock**
SNAM Rete Gas	**Mr. Alessandro Cappanera**
Transcanada Pipelines	**Mr. Brian Rothwell**
XG Algeria	**Mr. Abde Taberkokt**
Canadian National Energy Board	**Mrs. Duckworth [1)]**
PRCI/Kiefner Associates	**Ms. Kolovich and Mr. Haines[1)]**
Fluxys	**Vacant [2)]**
TGS	**Mr. Eduardo Espiñeira [2)]**

1) Guest members

2) Corresponding member

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Scope of work for IGU SG 3.4

- Determine the differences and similarities of existing databases
- Create a reference model to create a new pipeline incident database
- Determine if harmonisation of existing databases is possible and feasible
  - Provide recommendations regarding the above.

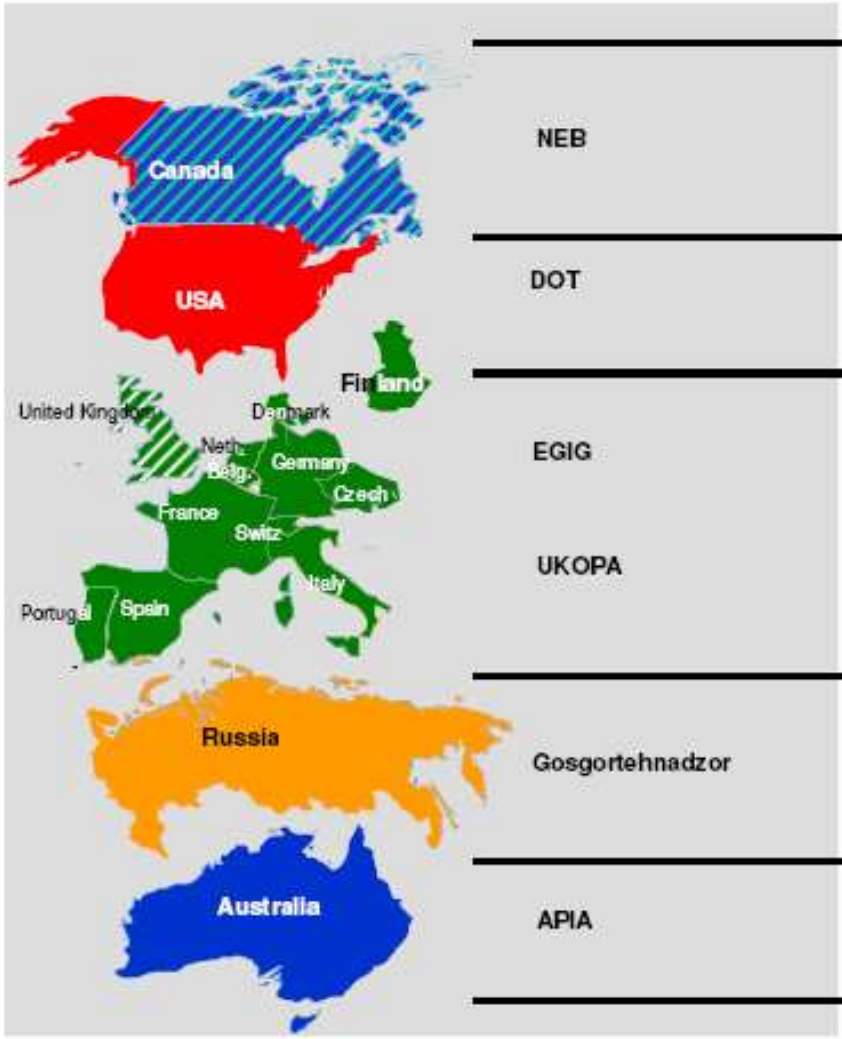
Importance of and Need for Pipeline Incident Information

- Authorities and Regulatory Bodies
  - Legislation or standards
- Gas Pipeline Operating Companies
  - Construction of new pipelines
  - Improvements to or demonstration of the safety of existing pipelines
  - Evaluation of safety management system performance
  - International benchmarking
- General Public
  - NIMBY effect
  - Regulatory requirements for safety communication
- Consultants/Contractors/Engineering Companies
  - Pipeline design optimization
  - Maintenance programs; threats versus measures

Worldwide Pipeline Incident Databases

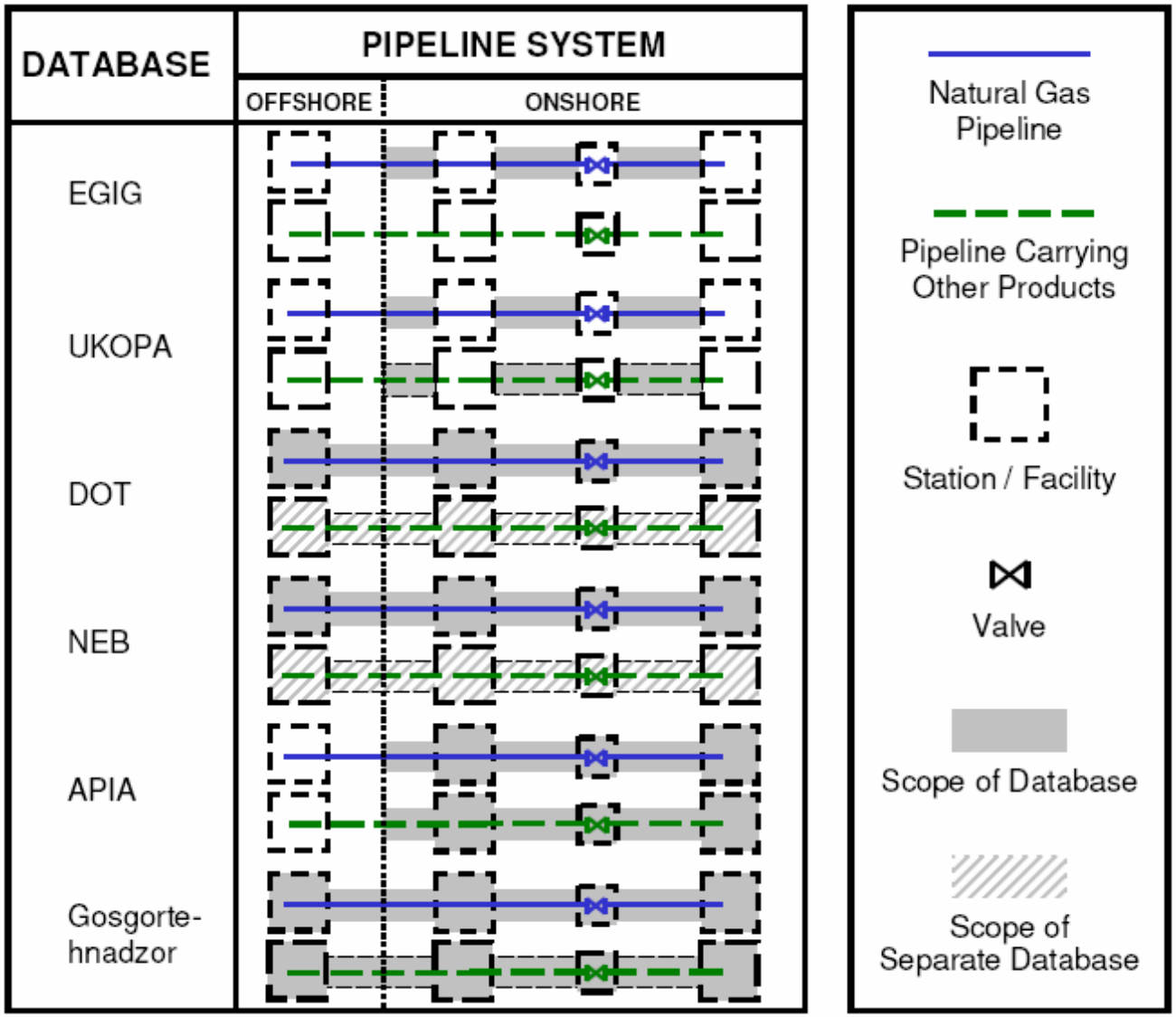
- **North America:**
  - Natural Gas Gathering and Transmission System Incident database, managed by Department Of Transportation (DOT);
  - Statistics about pipeline incidents, managed by National Energy Board (NEB)- Canada
  - Pipeline Incident Database British Columbia, managed by OGC (Canada);
  - Statistical Series managed by Alberta Energy and Utilities Board (EUB - Canada).
- **Europe:**
  - Gas Pipeline Incidents, managed by European Gas pipeline Incident data Group (EGIG);
  - Pipeline Fault Database, managed by UKOPA
- **Australia:**
  - Developmental Pipeline Incident Database, APIA (Australia)

Worldwide Pipeline Incident Databases (2)



NEB	National Energy Board Canada
DOT	US Department of Transportation – Office of Pipeline Safety
EGIG	European Gas Pipeline Incident Data Group
UKOPA	UK Onshore Pipeline Operator's Association
Gosgortehnadzor	Russian Association for Licensing
APIA	Australian Pipeline Industry Association

Comparative Analysis of Existing Pipeline Incident Databases (scope/boundary)



Comparative Analysis of Existing Pipeline Incident Databases

- External Factors Affecting the Safety Performance of Pipelines
- Pipeline System Information
- Incident Definitions: Incident Consequence and Target Systems
- Categorisation of Incident Causes
- Damage Classification
- Categorisation of Incident Consequences
- Reporting of Data

IGU Pipeline Incident Database Reference Model

- Determination of the Data Boundary
  - "Hardware" boundaries
  - Life cycle phases
  - Gas/liquids
- Population
  - Nominal pipe size
  - Wall thickness
  - Grade of pipe
  - Year of construction
  - Type of coating
  - Maximum operating pressure (MOP)
  - Depth of Cover

IGU Pipeline Incident Database Reference Model (2)

- Definition of an Incident
  - Pipeline body: incident = as a minimum “an uncontrolled release of gas”
- Occurrence of an Incident
  - Cause Recommendations
  - Incident Data Collection
  - Incident Consequences
- Data Handling
  - Method of Data Collection
  - Mode of Data Storage
  - Processing of the Data
  - Publishing of the Data

Conclusions

- Increasing demand for reliable pipeline incident information
- Significant differences in existing databases → statistical results are ***not*** easily comparable
- IGU pipeline incident database reference model → statistical results ***are*** easily comparable
- Ability to filter data is necessary
- Harmonisation is possible/feasible with relatively few changes to DOT, NEB and EGIG

Recommendation to IGU:
Start the harmonisation process as soon as possible