

International Electrotechnical Commission System
for Certification to Standards Relating to Equipment
for Use in Explosive Atmospheres (IECEX System)



Ex Scheme Implementation – PETRONAS Experiences

IECEX 2018
International Conference
Jakarta, Indonesia
8th and 9th August 2018

INTRODUCING

- Ir. Mohamad Faudzi b M Yasir
- Group Technical Authority (Electrical)
- PETRONAS

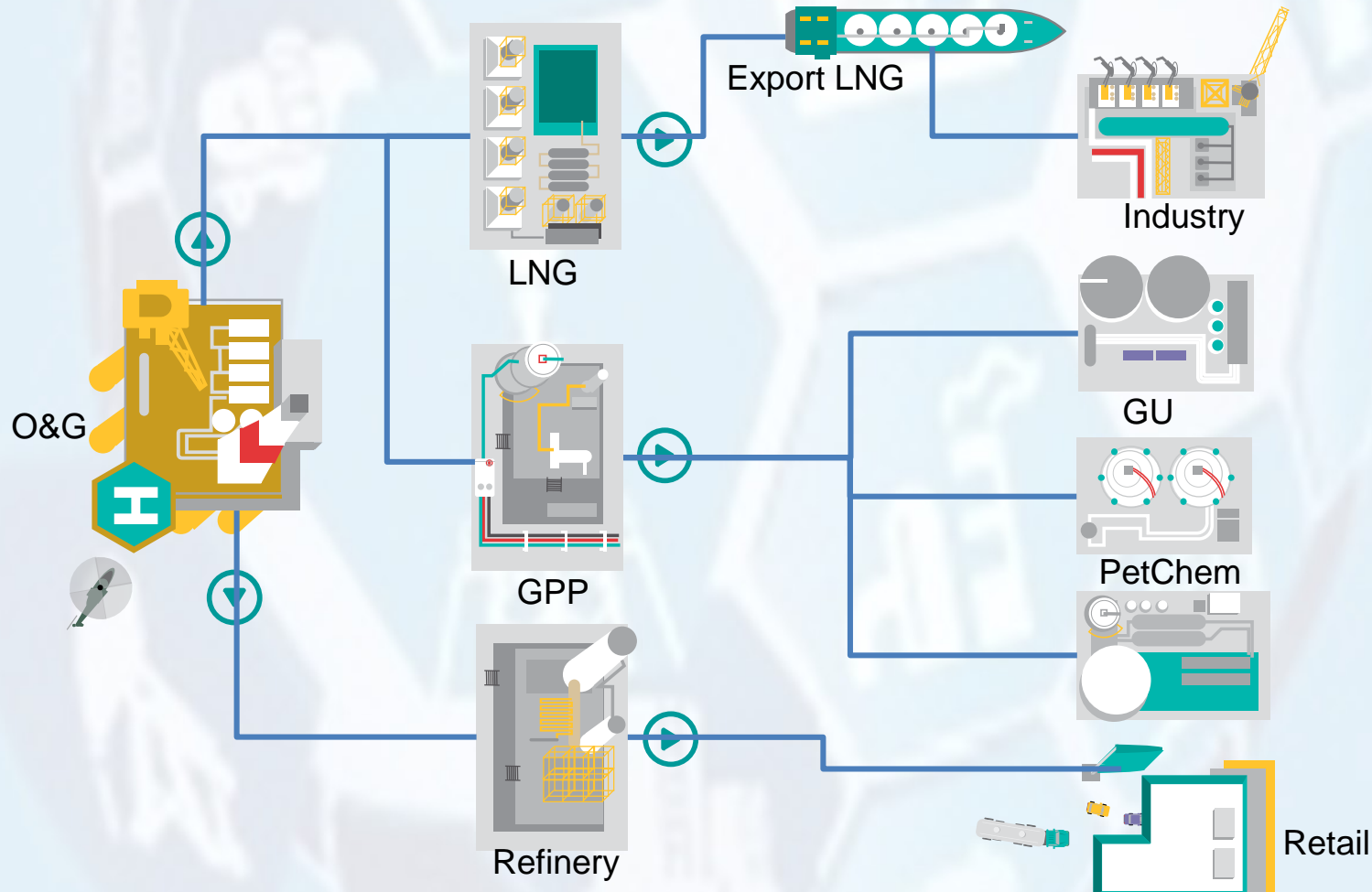


PETRONAS

Outlines



Key message – In context of PETRONAS business, Ex System is part of the ‘life system’ ensuring high integrity on safety of human and assets



Past experiences record the following 'pain points' on Ex installation



Lack of guidelines for Ex equipment management.



Poor tracking system with regard to overhaul and maintenance of Ex equipment e.g. Ex type motors and generators.



No repair workshop certified by independent body like IECEx scheme was available in Malaysia to service and/or overhaul Ex equipment.

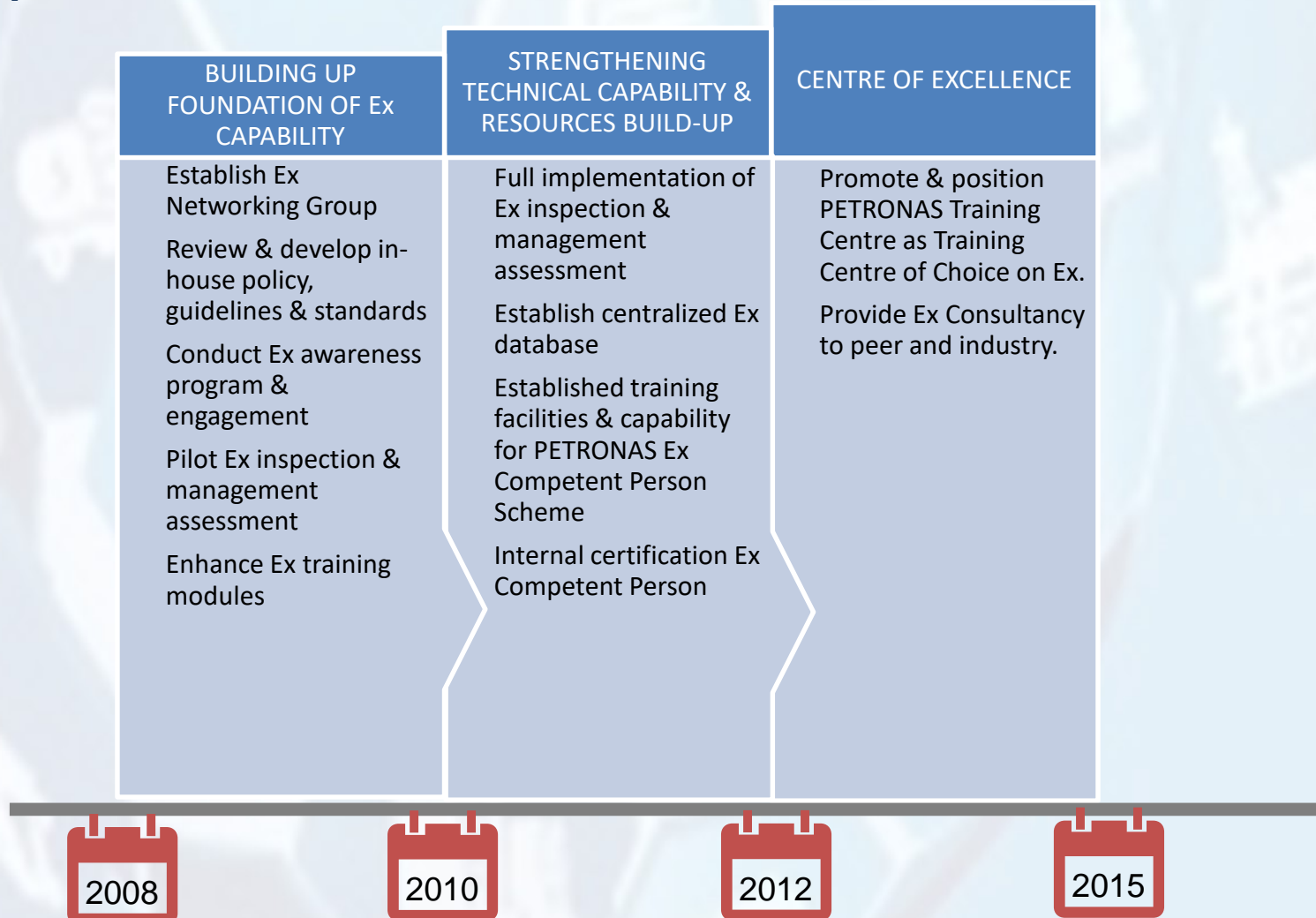


Rely on external service provider on Ex trainings.

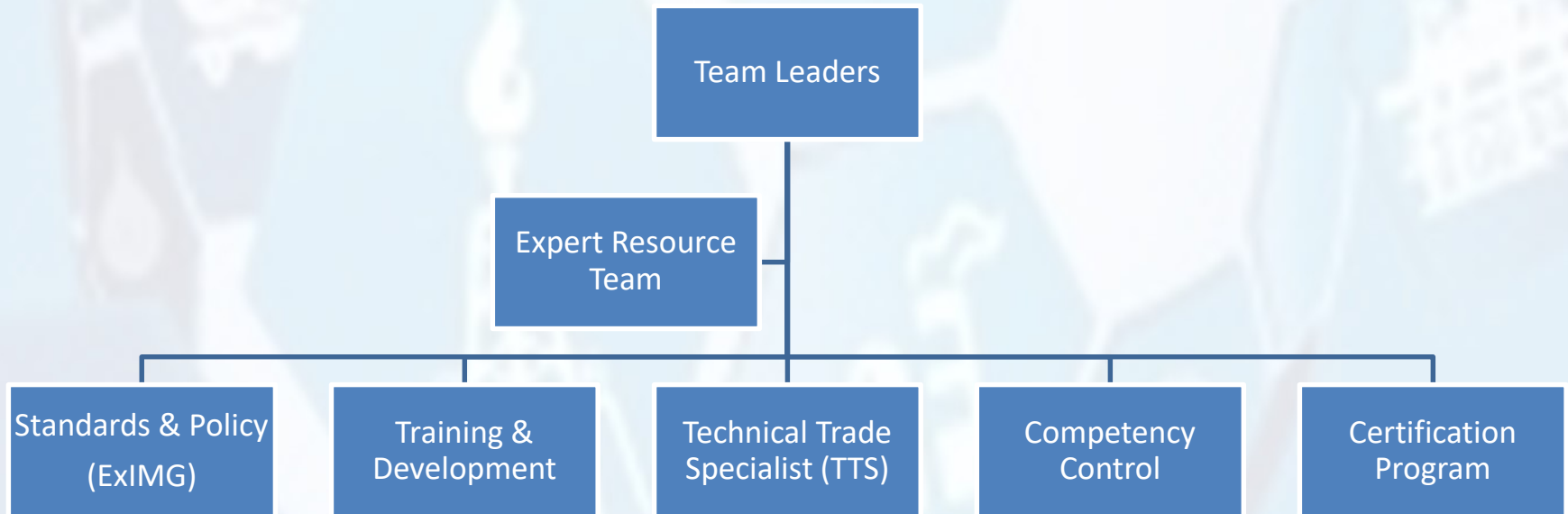


Lack of competent Ex personnel

Road map toward Centre of Excellence



Ex Networking Organisation Structure is crucial charting the group moving forward



Capability building through training internal and external program was undertaken in supporting the capital technical knowledge in Ex aligning with IECEX System

In-house Ex Training Program @ INSTEP

- **Ex Equipment and Installation (for technicians)**
- **Ex Equipment Requirement & Design (for electrical executives)**
- **IECEX Unit Ex 000, 001, 003, 004, 007, 008 Preparatory Training (Assessment by SIRIM)**

External Ex Courses

- **CompEX (Assets Training & Technical Services Pte. Ltd.)**
- **Repair and Overhaul of Ex Electrical Apparatus (AEMT, UK)**
- **Application of Electrical Apparatus in Potentially hazardous Areas (Shell Global Solutions)**

Institut Teknologi Petroleum PETRONAS (INSTEP) is a state-of-the-art technical training institute owned by PETRONAS Technical Training Sdn. Bhd. (PTTSB)

INSTEP
INSTITUT TEKNOLOGI PETROLEUM PETRONAS

Back to Aerial View

Upstream Downstream Training Plant »

Exploration & Production Academy »

Health, Safety, & Environment Academy »

Process & Analytical Academy »

Instrumentation Academy »

Mechanical & Inspection Academy »

Electrical Academy »

Accommodation & Dining »

Sports & Recreation Complex »

Classrooms & Learning facilities »

Contact Us (web form)

<http://www.instep.my/Pages/virtual-tour.aspx>



In 2016, INSTEP have been conferred by the International Electrotechnical Commission (IEC) as a Recognized Training Provider (RTP) for IECEx approved programs



Ex Training Program@ INSTEP

- Ex Equipment and Installation (for Technicians) – 5 Days Program
- Ex Equipment Requirement & Design (for Electrical Engineers/Executives) – 5 Days Program
- IECEx Unit Ex 000, 001 – 2 Days Program
- IECEx Unit Ex 003, 004 – 2 Days Program
- IECEx Unit Ex 007, 008 – 4 Days Program

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<http://www.instep.my/Pages/virtual-tour.aspx>

Institut Teknologi PETRONAS (INSTEP) provides conducive Ex training facilities – First in Malaysia and IECEx RTP



INSTEP is ready to meet demand on Ex training for operation and maintenance engineers and technicians from PETRONAS and Contractors.

Participation and contribution of PETRONAS professional in Ex System and Standards development in Malaysia demonstrating professional talent development on Ex

@National Level

Active in various technical committees on Ex policy and standards

- **National IECEx Management Committee (ExMC) – Chairman**
- **Technical Committee on Equipment for Explosive Atmospheres (TCEEA) – Chairman and Members**
- **Working Groups –Group Leaders and Members**

@International Level

- **Representing Malaysia in various meetings of international technical committees (IECEx and TC31), maintenance teams (MT) and working groups (WG) in International Electrotechnical Commission (IEC)**

PETRONAS is instrumental in establishing Ex System implementation in Malaysia

Technical advisory and consultancy, and guidance in supporting the industry through Ex Services Facility, e.g.:

Wehaya

Elektroserve

PFCE Sdn. Bhd.

Rotary Technical Service

Technical training in Ex e.g.:

SIRIM

Contractors

Notwithstanding some achievement, there are challenges in Ex way forward

Full compliance to Ex related internal standards

- **Ex IMG Assessments**
- **Integrated Asset Integrity Reviews**
- **HSE Assurances**

Inadequate awareness and competency amongst front liners.

Additional cost and resource requirements for training and maintenance.

Investment on Ex competency development and certification

- **User (Ex competency certificate)**
- **Service facilities (Ex service facility certificate)**

PETRONAS aspiration – Centre of Excellence on Ex

Centre of Ex learning; system and standards

Resource centre providing expert in Ex with adequate pool of IECEx certified Ex competent person

Industry leader in Ex management, consultancy and expert services

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Thank you