

# NPU-FEIAP B&R Engineering Education Training Centre (NFTC)



*1-Day Web-Conference of FEIAP- FAEO- WFEO on Engineering Education Accreditation System and Capacity Buildings in Belt & Road Region, Africa, Asia and the Pacific.*

## Introduction of Africa, Asia & the Pacific Accord (AAP Accord) for Mutual Recognition and Mobility of Engineering Personnel

**FEIAP Secretary General**

**Ir. Dr. TAN Yeap Chin**

November 7<sup>th</sup>, 2020



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## From FEISEAP to FEIAP

Exploratory meeting between EIT & UNESCO on 3 July 1978



Renamed as Federation of Engineering Institutions of Asia and the Pacific (FEIAP) on 2 June 2008



2018

2020

42 years old



The Federation of Engineering Institutions of Southeast Asia and the Pacific (FEISEAP)

was founded on  
**6 July 1978**



*FEIAP 40th birthday celebrated during GA in Malaysia on 12 July 2018*





**FEIAP Member Economies: 24**  
**Associate Members: 3**





## Office Bearers



**President**  
Dr. Prof. Huang Wei (CAST)



**Vice President**  
Dr. Charlie Than (MEngC)



**Immediate Past President**  
Dr. John Chien-Chung Li (CIE)



**Secretary General**  
Ir. Dr. Tan Yean Chin (IEM)



## Office Bearers



**Exco Member**

Engr. Kashim Abdul Ali (COREN)



**Exco Member**

Mr. Benedict T Mick (IEPNG)



**Exco Member**

Dr. Ir. Heru Dewanto (PII)



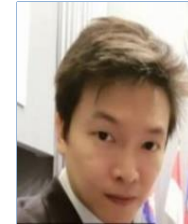
**Exco Member**

Prof. Douglas Hargreaves (EA)



**Exco Member**

Eng. John Kalamagye (IE Rwanda)



**Exco Member**

A/P Dr. Kitjapat Phuoravan (EIT)



## Office Bearers – Standing Committees



**Standing Committee on Engineering Education**  
Y.Bhg. Academician Tan Sri Dato' Ir.  
Prof. Dr Chuah Hean Teik (IEM)



**Standing Committee on Environment Engineering**  
Er. Chong Kee Sen (IES)



**Standing Committee on Information and Communication Technology**  
Er Narendra Singh (IEI)



**Standing Committee on Natural Disaster and Preparedness**  
Mr Sugk-Yong Yoon (KPEA)

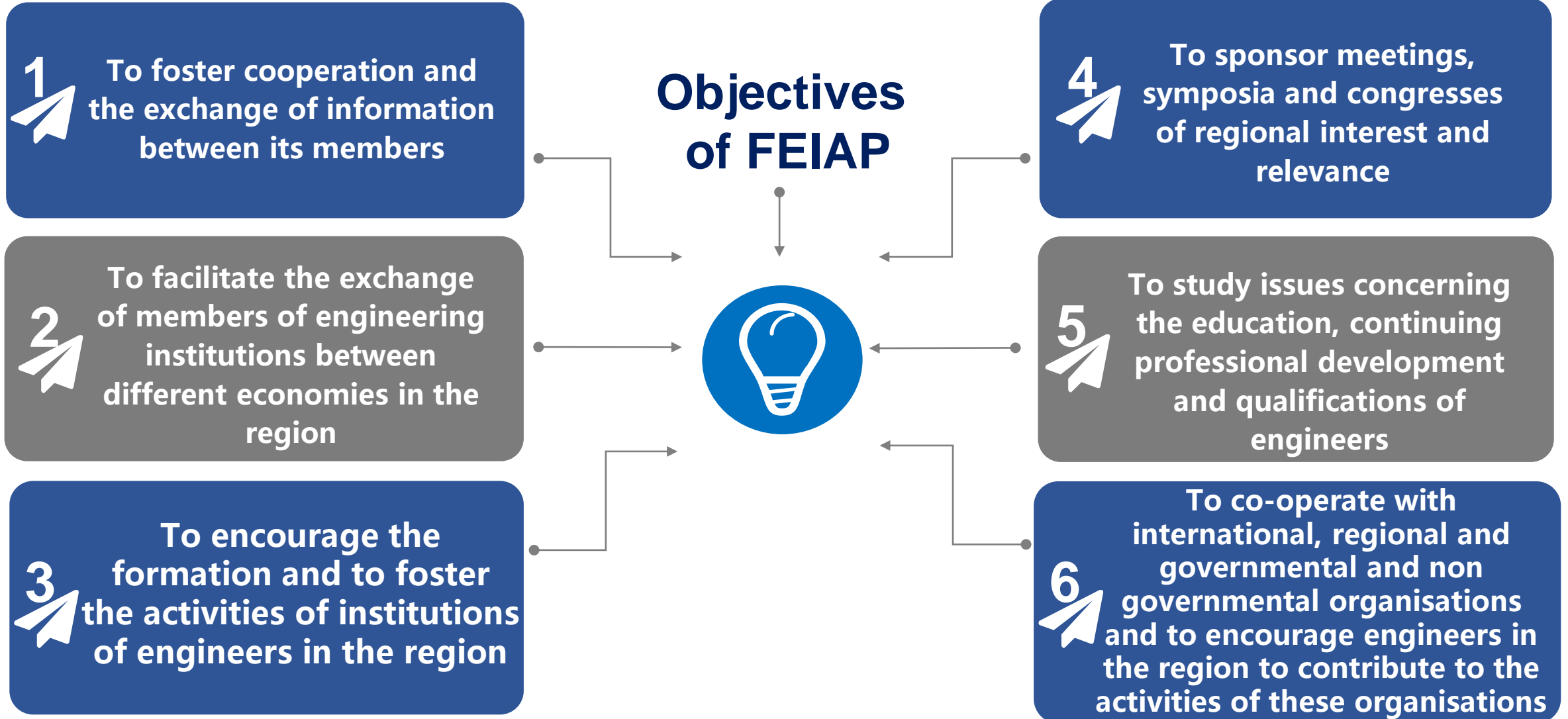


**Youth Talent Development Working Group**  
Ir. Yeoh Su Hong (IEM)





# Introduction to FEIAP: Objectives of FEIAP







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# Background: The Belt & Road Initiative





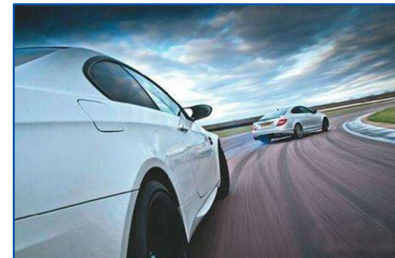
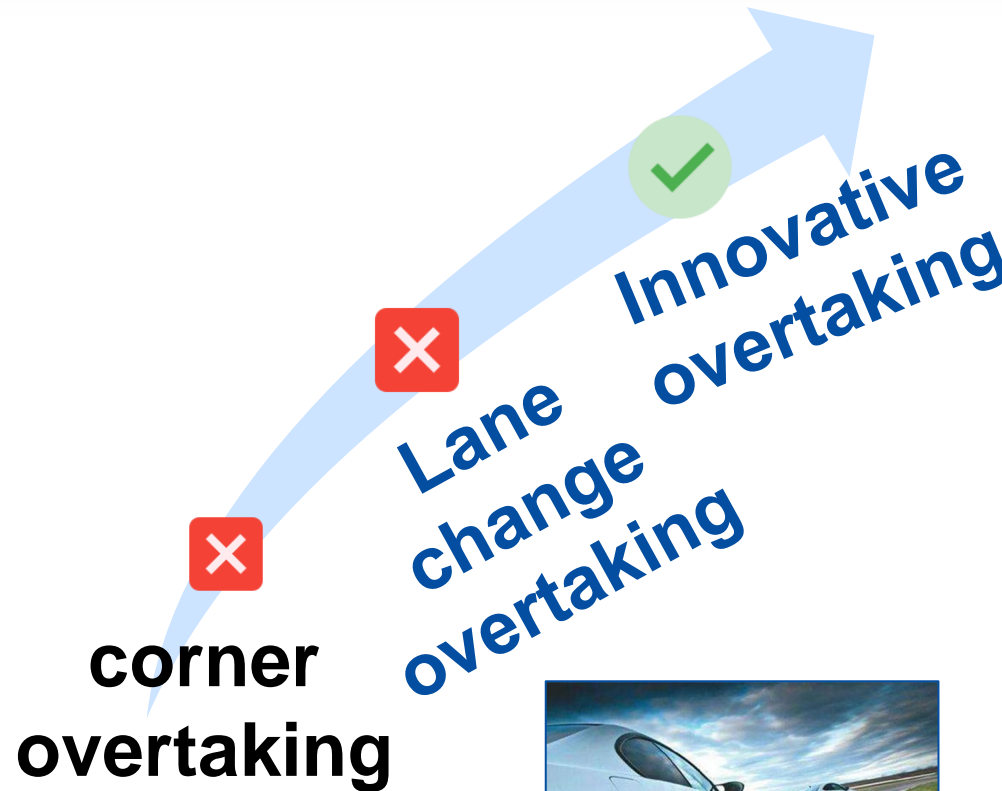
## Proposal 1: PLIM and FAMISHED Concepts

### PLIM

- P:** Physical Science
- L:** Life Science
- I:** Information Science
- M:** Mathematic Science

### FAMISHED

- F:** Flexible Electronics
- A:** Artificial Intelligence
- M:** Materials Science
- I:** Internet of Things
- S:** Space Science
- H:** Healthcare Science
- E:** Energy Science
- D:** Data Science





# 2030 Proposals (2019-2030)



## Proposal 2: NPU-FEIAP Belt and Road Engineering Education Training Centre (Officially Formed 29 June 2019 @ Xian, China)

### Functions of the Centre

Offer mentorship training and reviewing of FEIAP Engineering Education Guidelines

Promote the mutual recognition of the Engineering Education Programs

Enhance the mobility of engineers, engineering technologists, and technicians

Make contribution to the regional prosperity

### Goal of the Center

Train capable professors and engineers to guide and review the establishment of an Accreditation System



## Main ACTIVITIES carried out since 2019

TRAINING for Professors and Deans of Engineering Departments from :

- 1) Universities in FEIAP Members Economies
- 2) Universities or Rep of B&R Region (e.g. Central Asia and ASEAN)

Training on the mentoring and reviewing of “FEIAP Engineering Education Guidelines” that covers:

- 1) Engineers
- 2) Engineering Technologists
- 3) Engineering Technicians



= “Engineering Personnel”

## Objective

To train enough **Professors** and **Engineers** to help mentor and review process for the **Accreditation System** to be set up.





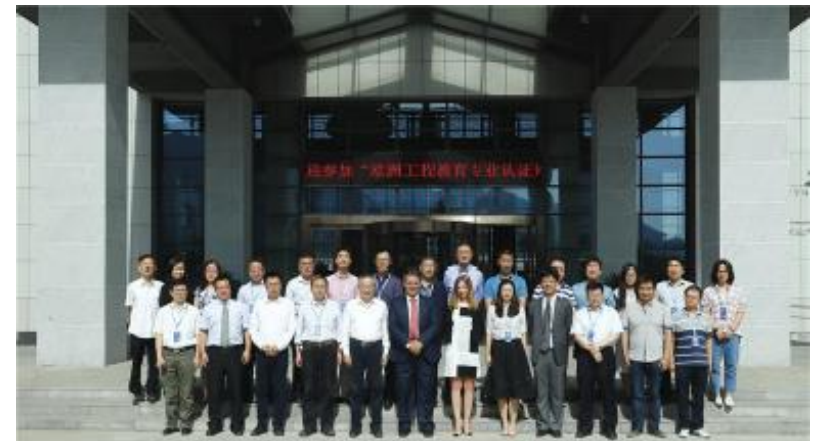
# Main Activities at the Training Centre



The “Belt and Road” Engineering Education Workshop (May, 2018)



FEIAP Engineering Education Accreditation Training (December, 2018)



EUR-ACE Engineering Education Accreditation Training (June, 2019)



Training on Engineering Education Assessment method (September, 2019)



Workshop for the Institution of Engineers Rwanda (February, 2020)



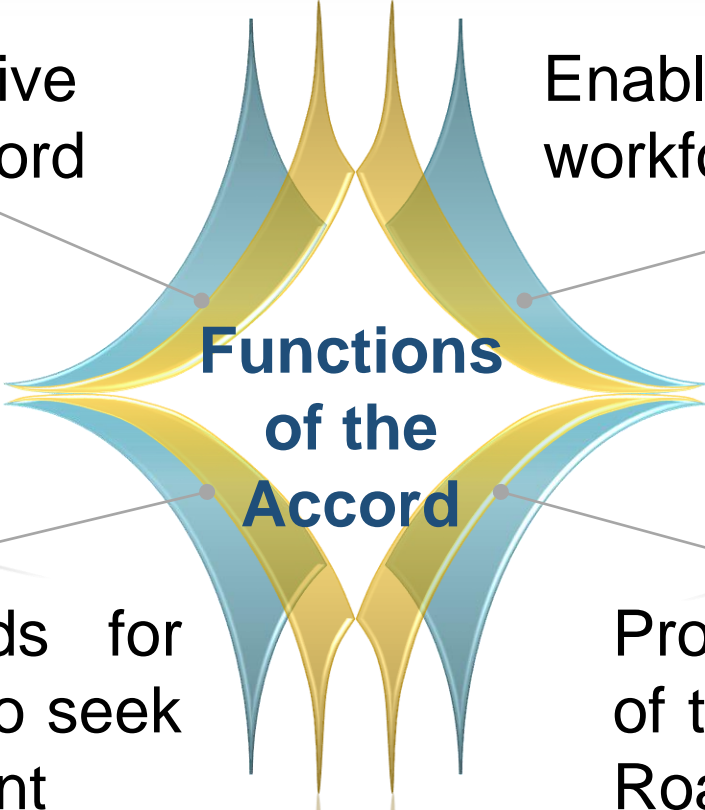
Engineering Education Online Training (May, 2020)



## Proposal 3: The Belt and Road Engineering Education Accord

Set up a unified and inclusive engineering education accord

Enable the mobility of engineering workforce in the Belt and Road Region



### Functions of the Accord

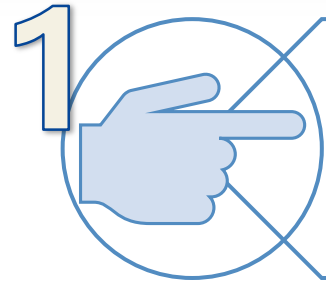
Rationalize the standards for engineering graduates who seek cross-economy employment

Promote the understanding of the civilizations in Belt and Road Economies

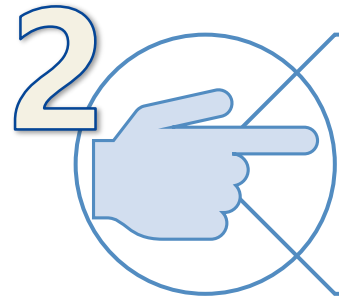




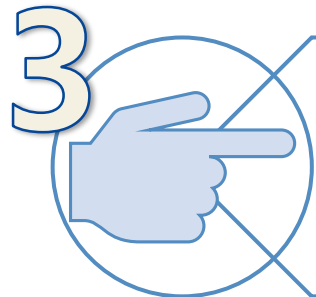
## Proposal 4: FEIAP Engineering Personnel Registry



Mutual recognition of engineering workforce among FEIAP member economies



Promote the mobility of engineering workforce and the exchange of scientific innovations



Build the “community with a shared future for mankind”



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## Engineering Personnel Progression and Development

Engineering Education



Graduate Level



Professional Level

FEIAP or Equivalent Engineering Accreditation System

Mobility NEEDED for Cross-Border Employment

Individual Practice (Mainly for Civil and Construction Industry)

- FEIAP Engineering Guidelines (full compliance)
- Washington Accord

**APEC and IPEA International Engineers**



## Engineering Personnel Progression and Development

Engineering Education

Graduate Engineers

Professional Engineers

Have the highest Numbers of Engineering Personnel but not being properly networked for Mobility and Exchange of Knowledges

FEIAP or Equivalent Engineering Accreditation System

Mobility **NEEDED** for Cross-Border Employment

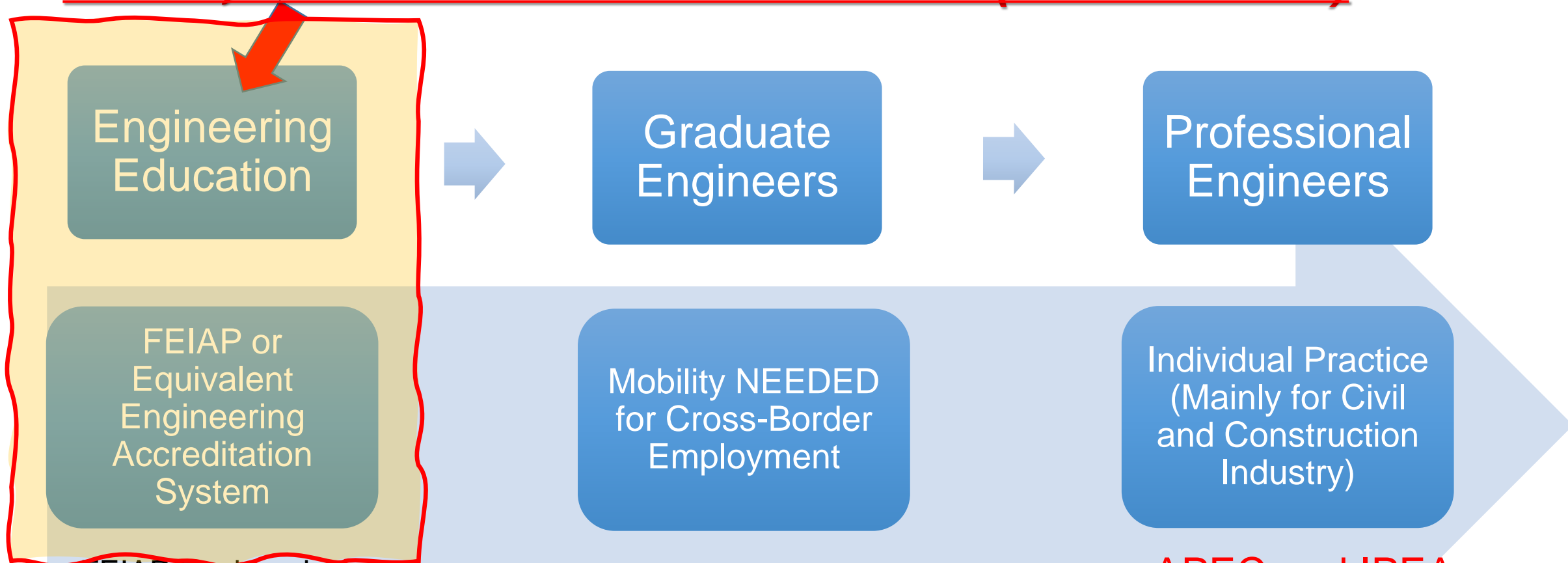
Individual Practice (Mainly for Civil and Construction Industry)

- FEIAP Engineering Guidelines (full compliance)
- Washington Accord

APEC and IPEA International Engineers



## Africa, Asia and the Pacific Accord (AAP Accord)



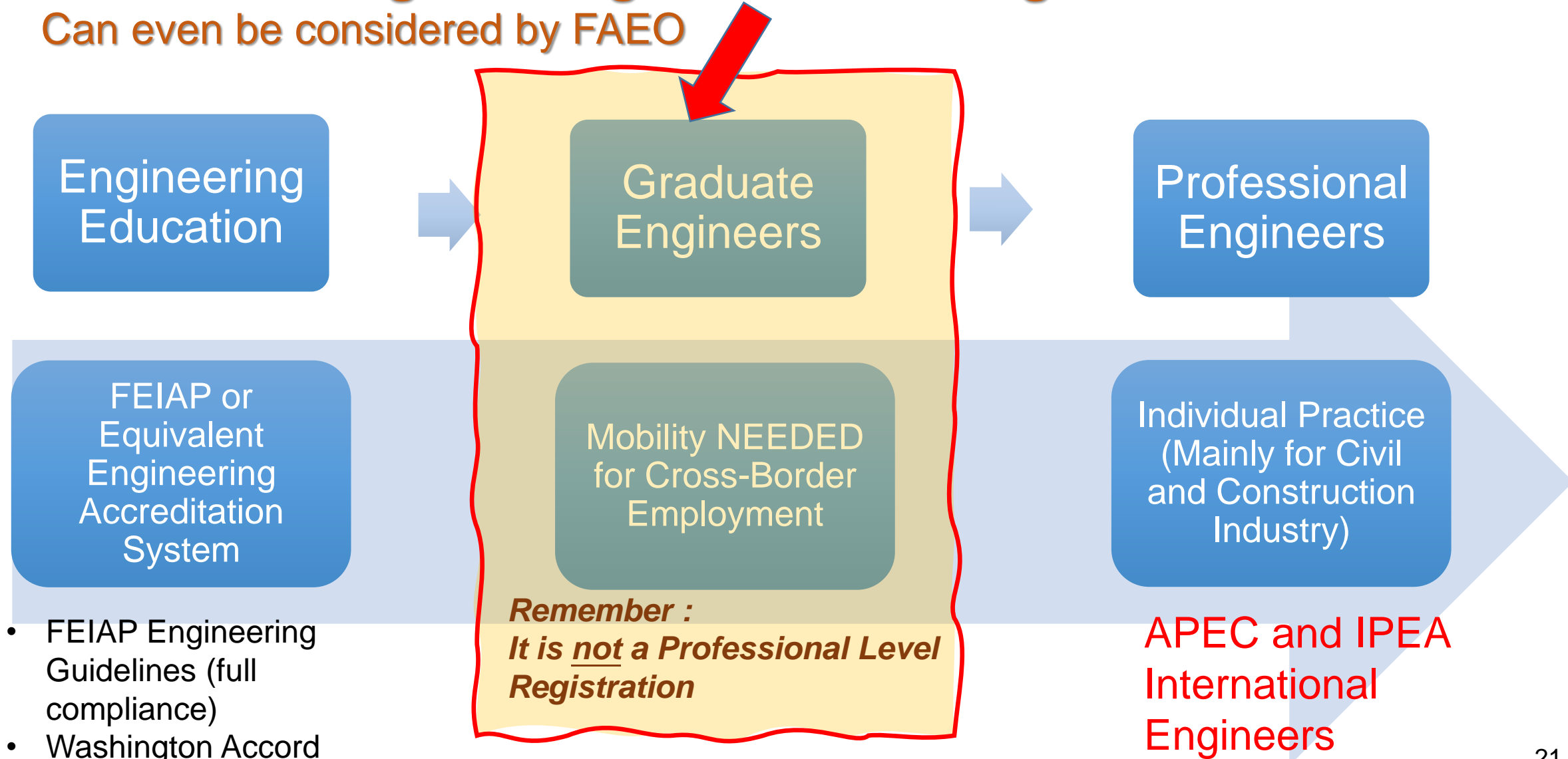
- FEIAP Engineering Guidelines (full compliance)
- Washington Accord etc.

**APEC and IPEA  
International  
Engineers**



## *Proposed* **FEIAP Engineering Personnel Registration**

Can even be considered by FAEO



Engineering Education

Graduate Engineers

Professional Engineers

FEIAP or Equivalent Engineering Accreditation System

Mobility NEEDED for Cross-Border Employment

Individual Practice (Mainly for Civil and Construction Industry)

- FEIAP Engineering Guidelines (full compliance)
- Washington Accord

**Remember :**  
**It is not a Professional Level Registration**

**APEC and IPEA International Engineers**



***A platform for mutual recognition of engineering workforce (Graduates) that covers :-***

- **FEIAP Engineers,**
  - **FEIAP Engineering Technologists,**
  - **FEIAP Engineering Technician.**
1. Those who fulfilled the FEIAP Engineering Education Guidelines or Equivalent Standards (Stage II Full Compliance).
  2. - Open to all Engineering Personnel who qualify. → Help in networking & Employment
  3. **NOT intended** for Professional Level (No duplication with APEC and IPEA)
  4. Free of Charge for all members of FEIAP Member Economies who qualify.
  5. EASY to achieve target as No cost implication.
  6. Voluntary basis among Institutions/Organisations – for industry



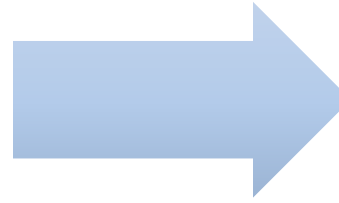


# FEIAP Engineering Personnel Register



FEIAP Engineering  
Education Guidelines

**“Africa, Asia and the  
Pacific Accord” (AAP  
Accord)**



\* FEIAP Engineers,  
\* FEIAP Engineering  
Technologists,  
\* FEIAP Technicians

Fulfilled the  
FEIAP Engineering Education  
Guidelines or Equivalent Engineering  
Accreditation System recognized by  
FEIAP

- 1) Issued by the FEIAP Members that fulfilled the criteria for their own members.
- 2) Promote Engineering
- 3) Recognition of Engineering Standards
- 4) Mobility NEEDED for Cross-Border Employment

*For FAEO, they may wish to consider introducing  
FAEO Engineering Personnel Register  
(in line with AAP Accord & Networking with FEIAP Engineering Personnel)*



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“Africa, Asia and the Pacific Accord” (AAP Accord) is a platform for mutual recognition of engineering workforce through accreditation system following “FEIAP Engineering Education Guidelines” or Equivalent (e.g. FAEO Guidelines) that covers

1

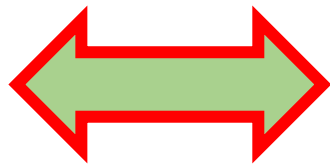
Engineers

2

Engineering Technologists

3

Engineering Technicians



Federation of African Engineering Organisations (FAEO)

Federation of Engineering Institutions of Asia and the Pacific (FEIAP)

*Participation is VOLUNTARY*



# Objectives of AAP Accord



1

To have a unified & inclusive engineering education accord that promotes **mutual recognition** of engineering education for engineers, engineering technologists and engineering technicians in Africa, Asia and the Pacific.

2

To facilitate the rationalization of the standards of engineering graduates for **cross-economy employment**.

3

To enable **mobility of engineering workforce** in Africa, Asia and the Pacific.

4

To promote **understanding of civilization** in these regions via cultivation of cultural intelligence in engineering education

Note

- 1) Not intended for **Professional Engineer Independent Practice** (e.g. APEC Engineers or IPEA International Engineers)
- 2) Meant only for **MOBILITY of ENGINEERING PERSONNEL**.



## FEIAP Engineering Education Guidelines

1

To assist member economies fulfill FEIAP Engineering Education Guidelines (FEEG):  
To provide assistance which will track the development needs of individual economies appropriate to nation building. Note : This will be very helpful for developing economies. (e.g. many economies in the Belt & Road Region)

2

For the recognition of graduates satisfying the academic requirements for APEC Engineer Register and other registries.

3

Make reference to graduate outcomes equivalent to WA, EUR-ACE and/or other equivalent standards.

4

Participation is voluntary.



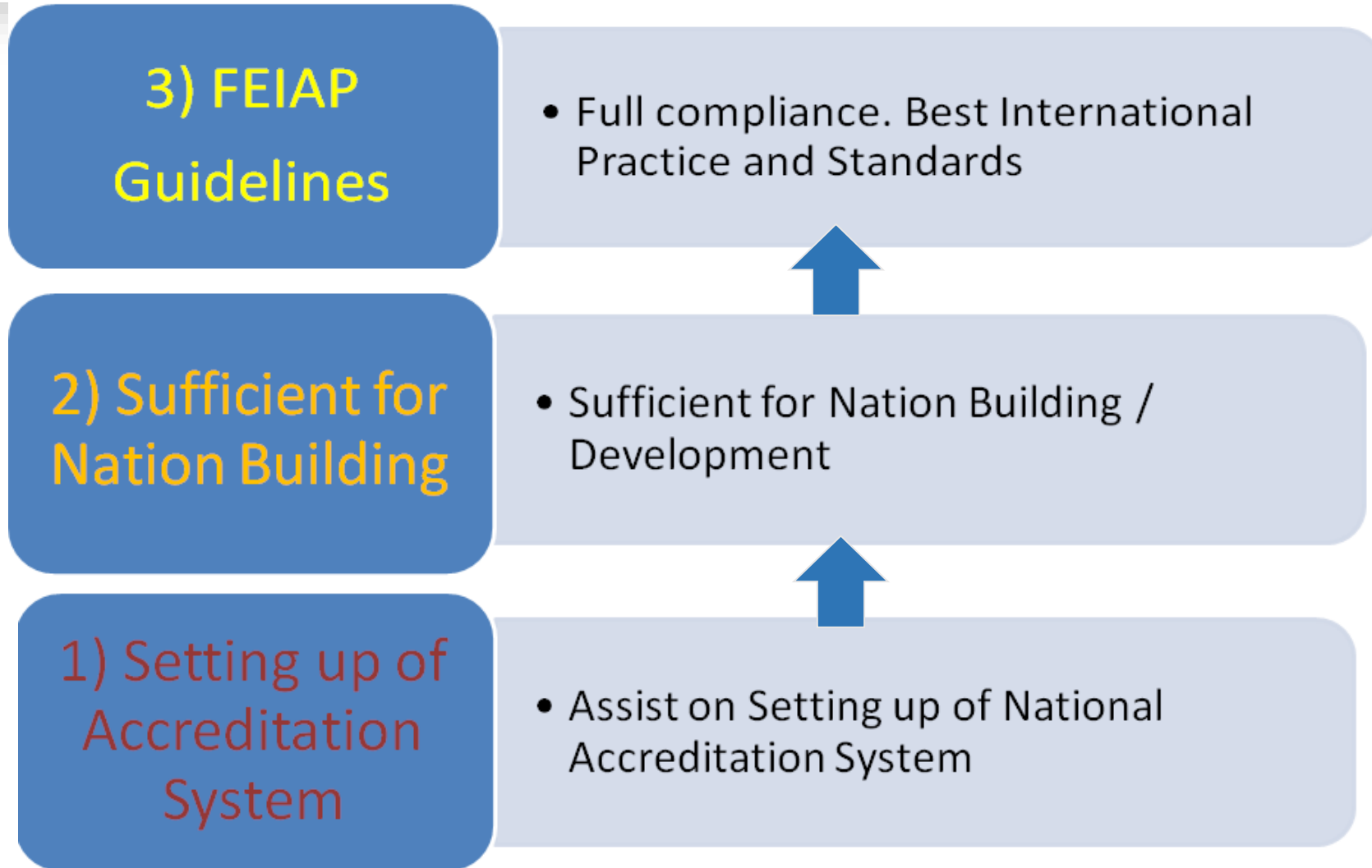
# The AAP Engineering Education Accord



| FEIAP ENGINEERING EDUCATION GUIDELINES   | WASHINGTON ACCORD  |
|--|--|
| Outcome Based Education (OBE)  | Outcome Based Education (OBE)  |
| <p>FEIAP has comprehensive <b><i>Mentoring and Guidance Programme</i></b> for FEIAP Member Economy to start and set up accreditation system.</p> <p><u>Important for Developing Economy which still does not have Accreditation System</u></p>   | Not Specified  |
| <p>Two Phased Development Sequence:</p> <ol style="list-style-type: none"> <li>I. Graduate Capabilities appropriate to <b><i>Nation Building</i></b></li> <li>II. Graduate Capabilities compliant with education requirement of APEC Engineer, bench-marked against <b><i>best international practices and standards as that of WA, EANEE etc</i></b></li> </ol> | <p>From Provisional Member towards Full Member.</p> <p><i>Note : FEIAP Phase II. (Full Compliance to the FEIAP Guidelines) = Standards Equal to WA Full Member</i></p> |
| Approval based on <b>MAJORITY (Inclusive)</b>  | Approval based on <b>UNANIMOUS (Exclusive)</b>   |
| Full compliance (Phase II) to FEIAP Guidelines = Accepted by APEC Engineer   | Full Member = Accepted by APEC Engineer and IPEA Engineer.   |



## Concept on Development of Engineering Education







**Together we achieve more !!**



“An arch consists of two weaknesses,  
which, leaning on each other,  
become a strength.”

-Leonardo da Vinci





**THANK YOU  
FOR YOUR ATTENTION**

**FEIAP Secretary General**

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November 7<sup>th</sup>, 2020

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