

FIDIC-GAMA 2017



Conference on Infrastructure

7 - 10 May | Cape Town | South Africa

**Capacity building in infrastructure delivery through
the verification of knowledge and the application
of concepts and principles**

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#FIDIC_GAMA2017



Infrastructure



Public infrastructure

- has little inherent value
- creates value through the economic and social activities it supports.

Public infrastructure which

- provides improvements or efficiencies in services, production or export capabilities
- is delivered and maintained in a manner which **minimizes waste of materials, time, and effort in order** to generate the maximum possible amount of value
- is most likely to contribute to economic growth



Key question – are projects being delivered within budget, to the required quality and within schedule?



Procurement and delivery management

Procurement is the process which creates, manages and fulfils contracts

Delivery management is the organisation, administration, and supervision of processes which when combined into a comprehensive plan, provides the business and technical functions needed to successfully achieve the required infrastructure project outcomes

Procurement and delivery management is central to the delivery of infrastructure – it embraces the planning of projects, the soliciting and evaluating of tenders and the administration of contracts

Short comings in project outcomes can be attributed to poor procurement and delivery management processes and practices.



Are we properly preparing engineers?

Schools of engineering at universities usually teach procurement and delivery management in a superficial manner

Assumption - graduates will pick it up during their initial professional development or through CPD after acquiring professional status

But do they? Are they abreast with developments in this field?

Public bodies have limited capacity to procure and deliver projects

Is the private sector able to provide effective assistance in this area?

Need to expose engineers to **best practice standards** to acquire the necessary skills to improve infrastructure project outcomes



Recent developments and challenges

Significant developments have recently taken place for example

- UK has moved away from the **traditional pre-planned approach**
- SA National Treasury **separates the supply chain** for infrastructure from that for goods and services and requires procurement and delivery management strategies
- **ISO 10845 standards for construction procurement** adopted by UK, Russia and Netherland (some parts) and Albania, Bosnia and Herzegovina, Czech Republic, Kazakhstan, Mongolia, South Africa and Zimbabwe (all parts)
- Researchers are **only now beginning to write** up case studies and provide evidence-based research to assist decision making
- **Universities are not in a position** to expose the next generation of engineers to the alternatives that are currently available



Measures to improve performance

Look to **quality management systems** to improve their overall performance in delivering public infrastructure

ISO 9000:2005 defines competence as ***“demonstrated ability to apply knowledge and skill”***

Applied to procurement and delivery management:

Need to be able to **verify the competence of individuals** who are **entrusted** to manage the delivery of infrastructure projects, develop procurement documents, evaluate tenders and administer contracts

Verification of knowledge in and appreciation of a topic can be assessed through examination by means of multiple choice questions

Certification of competence requires a more thorough assessment e.g. through assignments

But it can't be done in a vacuum:

Also require access to **expert insights and guidance** on the subject matter



Opportunities to improve delivery

There's a GAP and urgent need for:

- readily accessible and affordable access to knowledge and
- cost effective means of verifying that a person has acquired such knowledge

Need an approach which obviates the need for travelling great distances and taking time off work to attend a course



Opportunities identified

Solution:

Online learning material can be studied anywhere at any time. **Africa's recent strides in providing access to cellular and mobile data technologies can be leveraged to deliver online content and examinations**

Universities can offer stand-alone courses or courses which contribute to post graduate qualification, **building upon and extending** the basic verification examination and expert online learning material

Those who pass the examinations can be made accessible to **employers and clients** i.e. to the public



Building capacity in Africa

What are **common standards** used in infrastructure delivery in Africa?

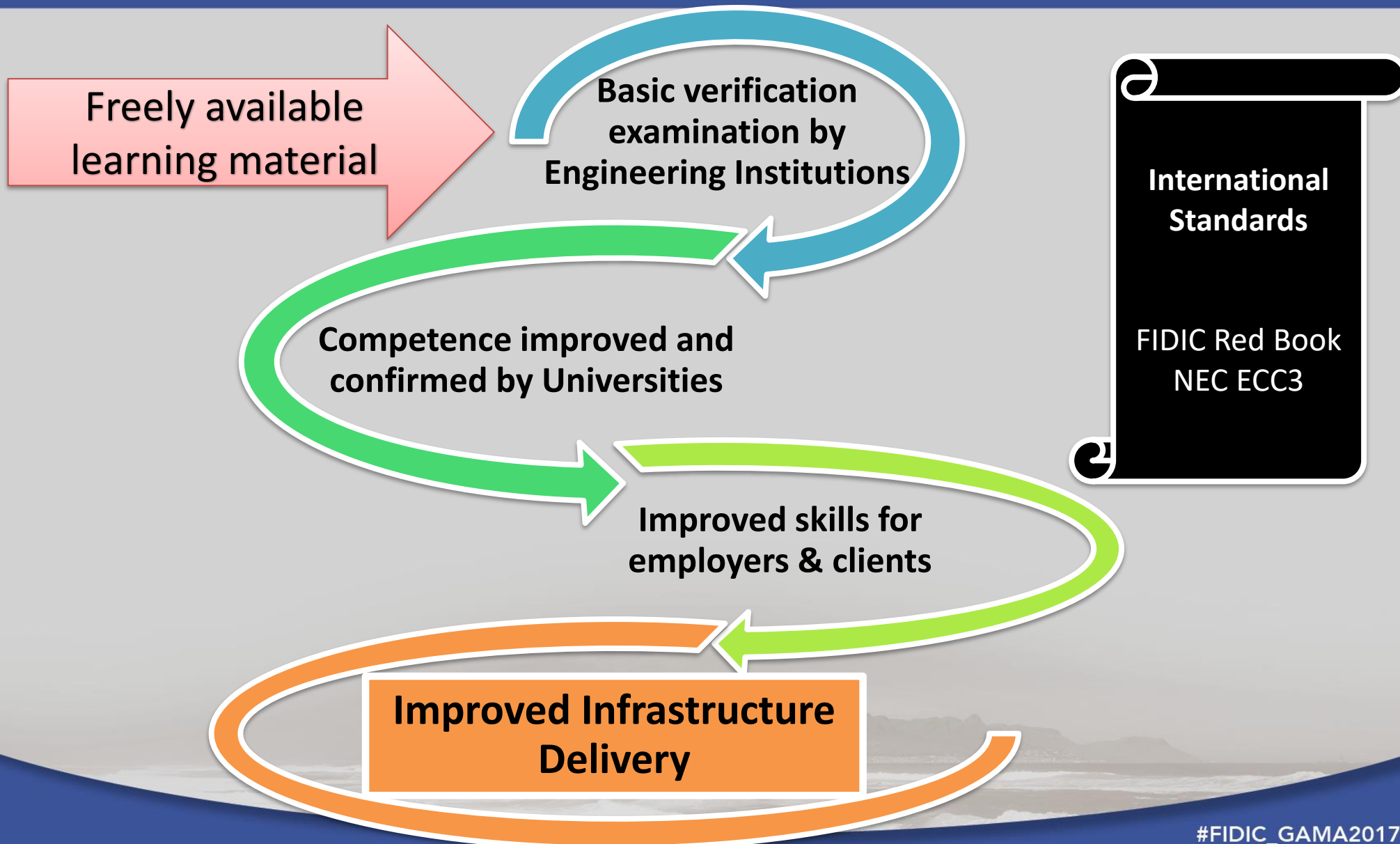
- **ISO 10845** construction procurement standards and
- **FIDIC** and **NEC forms of contract**

Professional bodies to engage in roll out and implementation:

- Federation of African Engineering Organisations (FAEO),
- Commonwealth Engineers Council,
- International Federation of Consulting Engineers (FIDIC) Group of African Member Associations (GAMA) and
- regional groups of other international engineering organisations



New approach to development





Building capacity in Africa

Africa Catalyst project

- Grant Funding administered by Royal Academy of Engineers

SAICE and CESA, are piloting a project for putting in place:

- 1) An online **learning platform**
- 2) An online **verification examination** for
 - 1) FIDIC Red Book and
 - 2) NEC3 Engineering and Construction Contract
- 3) Online **learning material** addressing
 - 1) FIDIC Red Book and
 - 2) NEC3 Engineering and Construction Contract



ONLINE = SHARING WITH ALL AFRICAN ENGINEERS



Online learning platform - construct

Progress:

An online learning platform has been set up to:

- host online multiple choice verification examinations
- issue verification certificates to those who pass
- provide lists of persons who have passed the verification examinations for a particular standard
- provide learning material to assist in preparation for the examination, provide knowledge on the application of the standard or assist a person in implementation
- provide information and links to short courses which provide a more in depth assessment of abilities on the subject matter

Web address: <http://verification.ice-sa.org.za/>

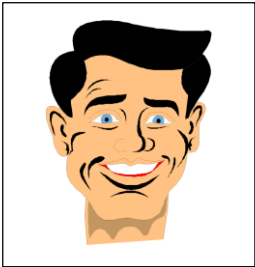



Online learning material


5 to 15 minute Power Point presentations


TITLE


Name of author
Qualifications (abbreviated)
Affiliations











Very simple technology - all one needs is PowerPoint and a good quality microphone.
iSpring Add-in does the rest!

Use iSpring software which is a PowerPoint add-in that permits:

- attach reference material
- record voice-overs for presentations
- generate SCORM output for examinations
- easy uploading on the web.

<http://www.ispringsolutions.com>



Role of engineering institutions

- Consulting Engineers South Africa (CESA) and the South African Institution of Civil Engineering (SAICE) have put in place the online learning platform (<http://verification.ice-sa.org.za>)
- CESA is hosting and invigilating the examinations through their 16 branches spread across South Africa
- CESA and SAICE are looking for experts who are willing to **contribute** learning material on the selected pilot standards
- Online learning material will be available to the public **free of charge**
(Permit limited self-promotion in material)
- Payment for examination £25 enables website to be maintained, and makes it viable for other Engineering Institutions to host and invigilate



Take up the Challenge!



Will **your** engineering institution **take advantage** of this scheme and promote the verification examinations and **host the examinations** in your country to build capacity in Africa?

Any experts who wish to **contribute** a 5 to 15 minute PowerPoint presentation?

If so contact:

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