Empowering the construction sector to digital transformation

Worldwide certification as a consistent benchmark

Dublin, 12.06.2018

CURRICULUM VITAE

M.Sc. Sarah Kristina Merz

Head of Education Center

2006	**Architecture**, Bachelor of Arts University of Applied Sciences Aachen, Germany
2008	Urban Development Kunming University of Science and Technology, Kunming, China
2009	**Civil Engineering & Economy**, Master of Sciences Bauhaus University Weimar, Germany
2011	**Lifecycle Financial Management** Stanford University, USA
2011	Freelance Editor
2014	Product Developer, Beuth publishing DIN
2016	Head of Education Center, DEUBIM GmbH
2016	Committee Member: VDI 2552 Blatt 8 „BIM-Qualifications“
2016	German Representative: buildingSMART International „Professional Certification“
2016	Speaker: Working Group buildingSMART Germany „BIM-Certification“

OUR VISION

We help the building and real estate industry to maintain perspective within digital transformation..

Our fields of competence

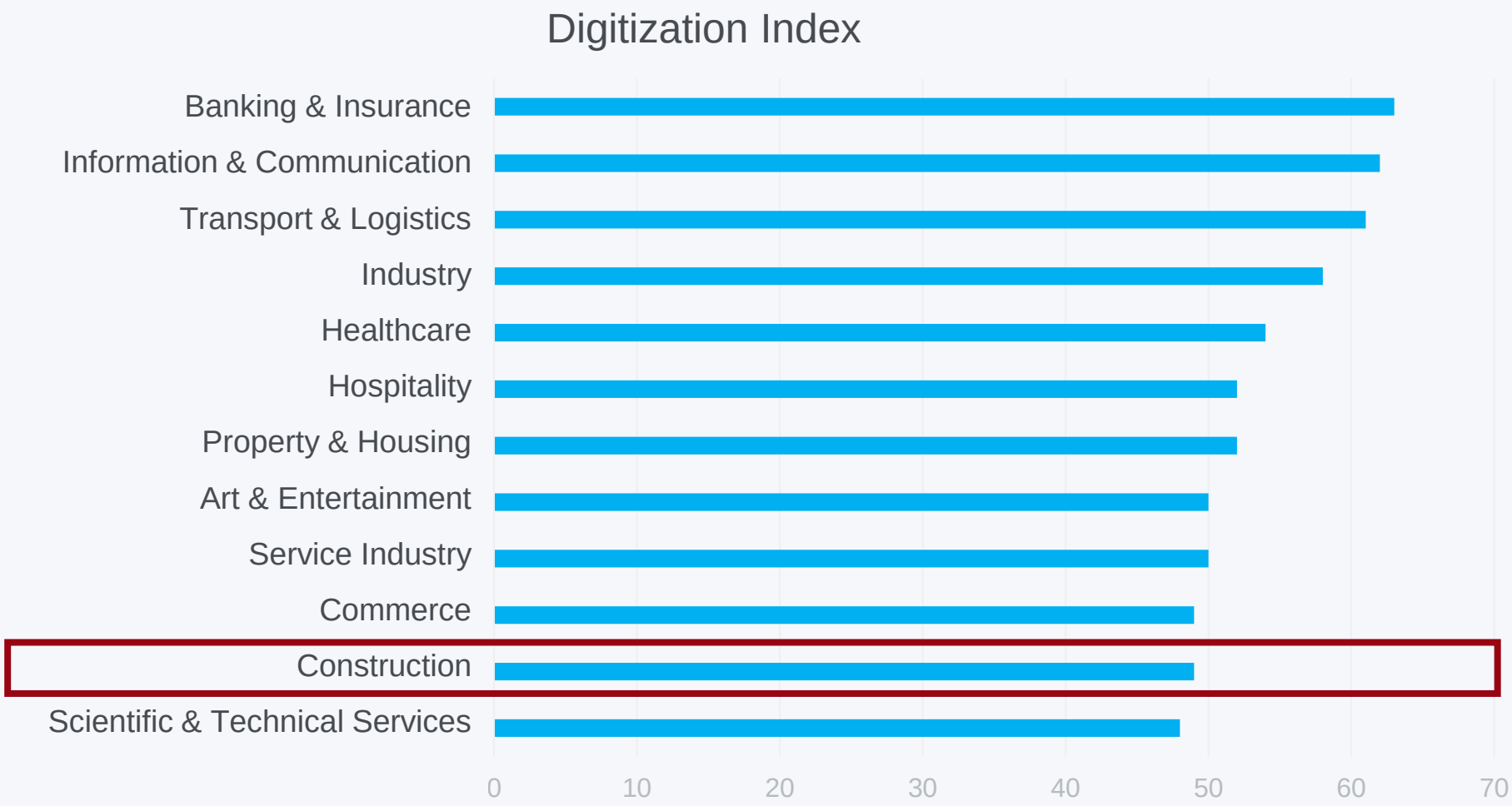
DEUBIM POS4

How digital are we?

[1]

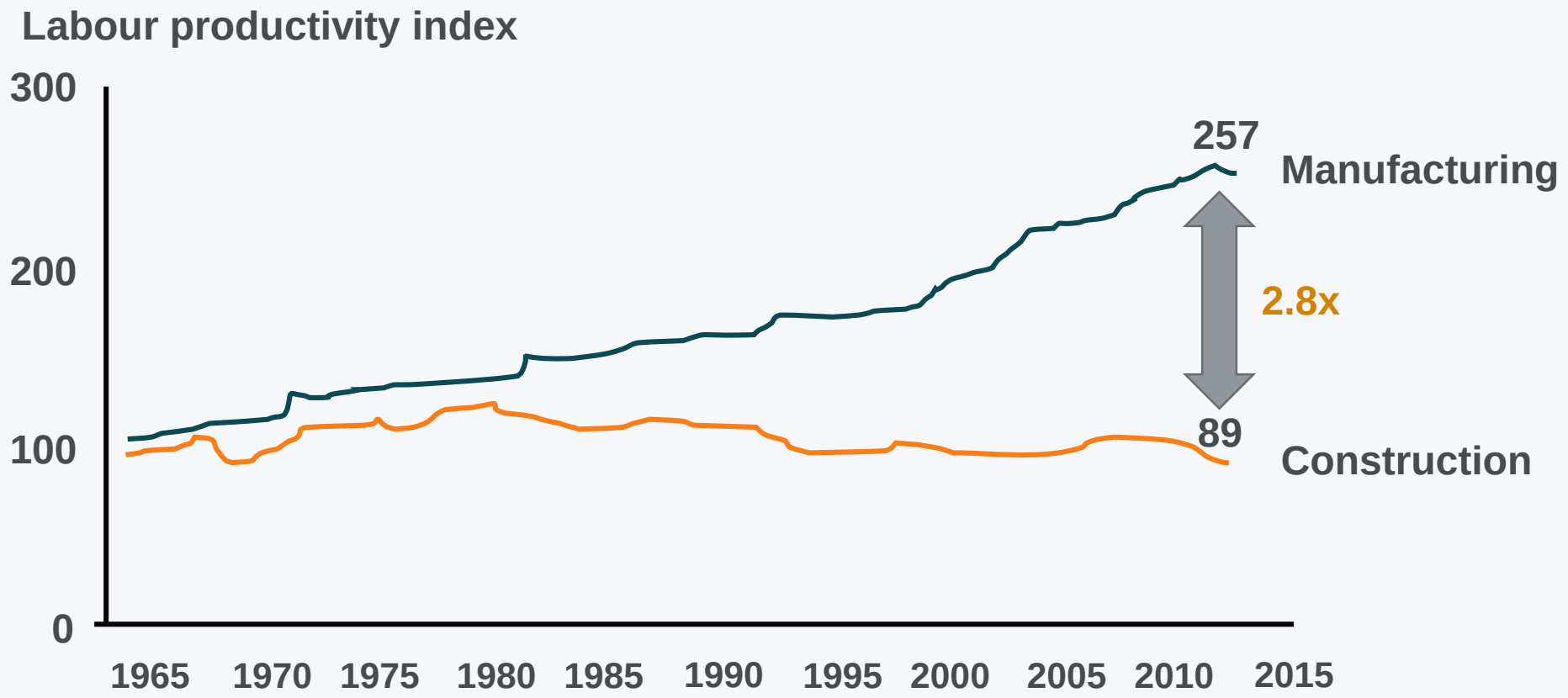
STATUS QUO

Digital Backlog



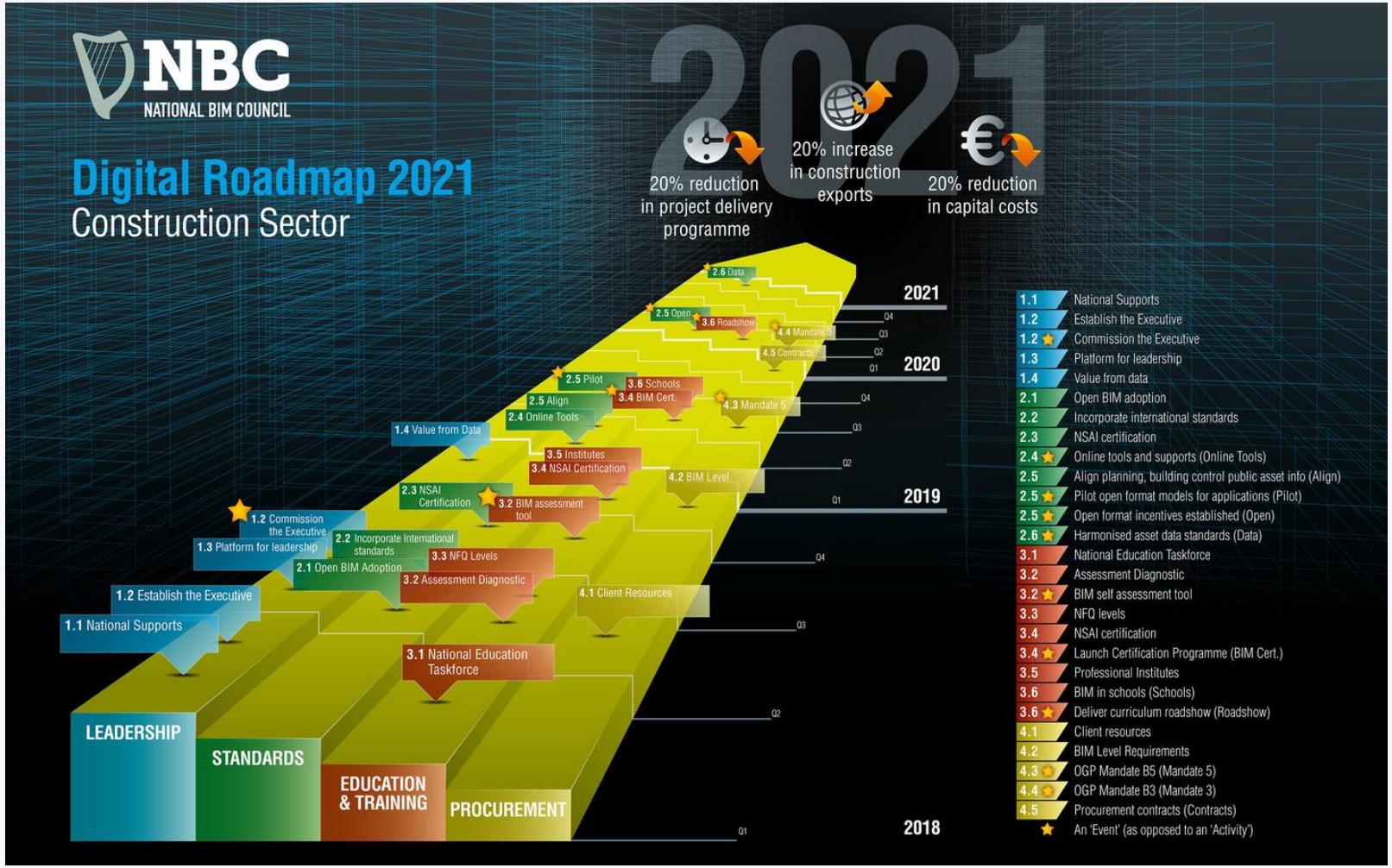
[2]

Productivity Gap



[3]

Digital Roadmap NBC



[4]

BIM Roadmap Germany

- Pilot Projects
- Standardisation
- Education and Training
- Development of BIM guidelines
- Legal Clarification

Step 1

2015 – 2017

Preparation Phase

- Continuation of Step 1‘s Preparation
- Expansion Pilot Projects
- Gaining BIM experience

Step 2

2017 – 2020

Extended Pilot Phase

(Level 1)

- Widespread Implementation
- BIM as a Standard

Step 3

from 2020

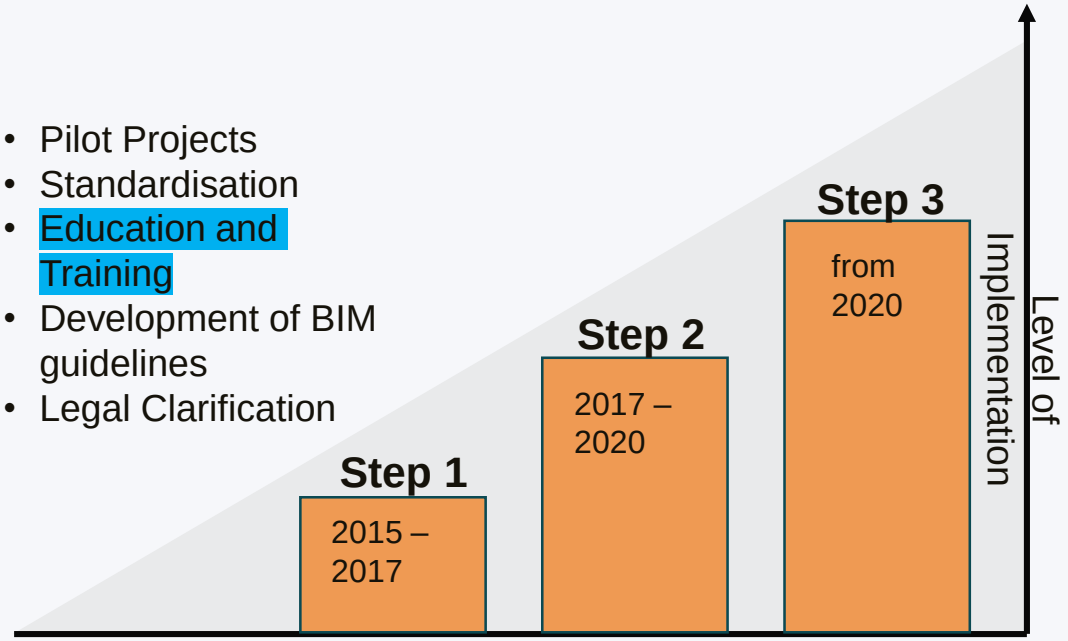
BIM Level 1 for new planned projects

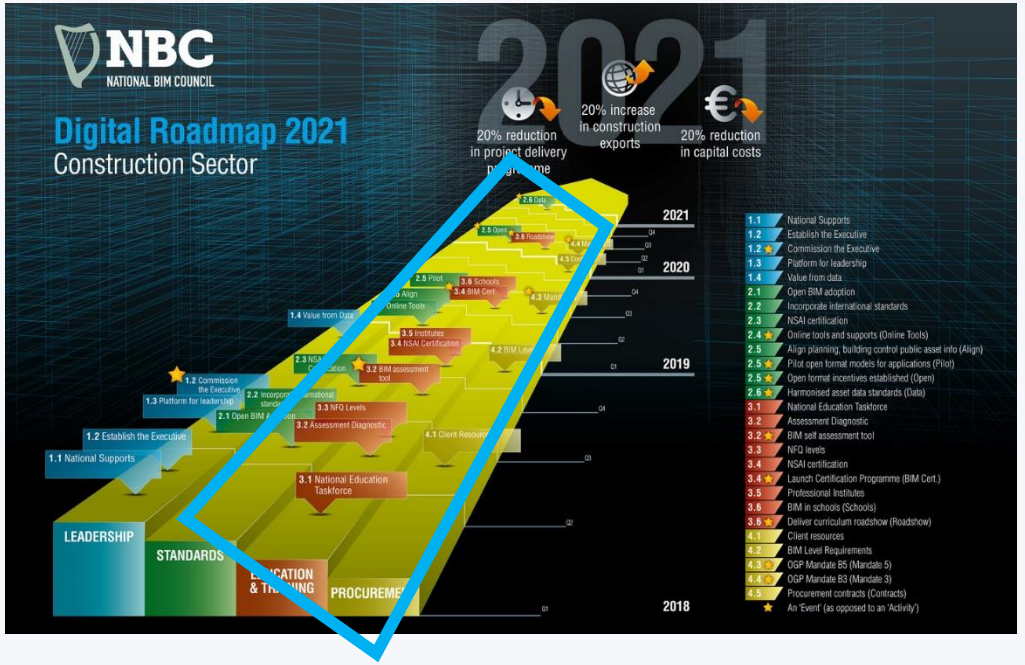
Level of Implementation

[5]

Education and Training

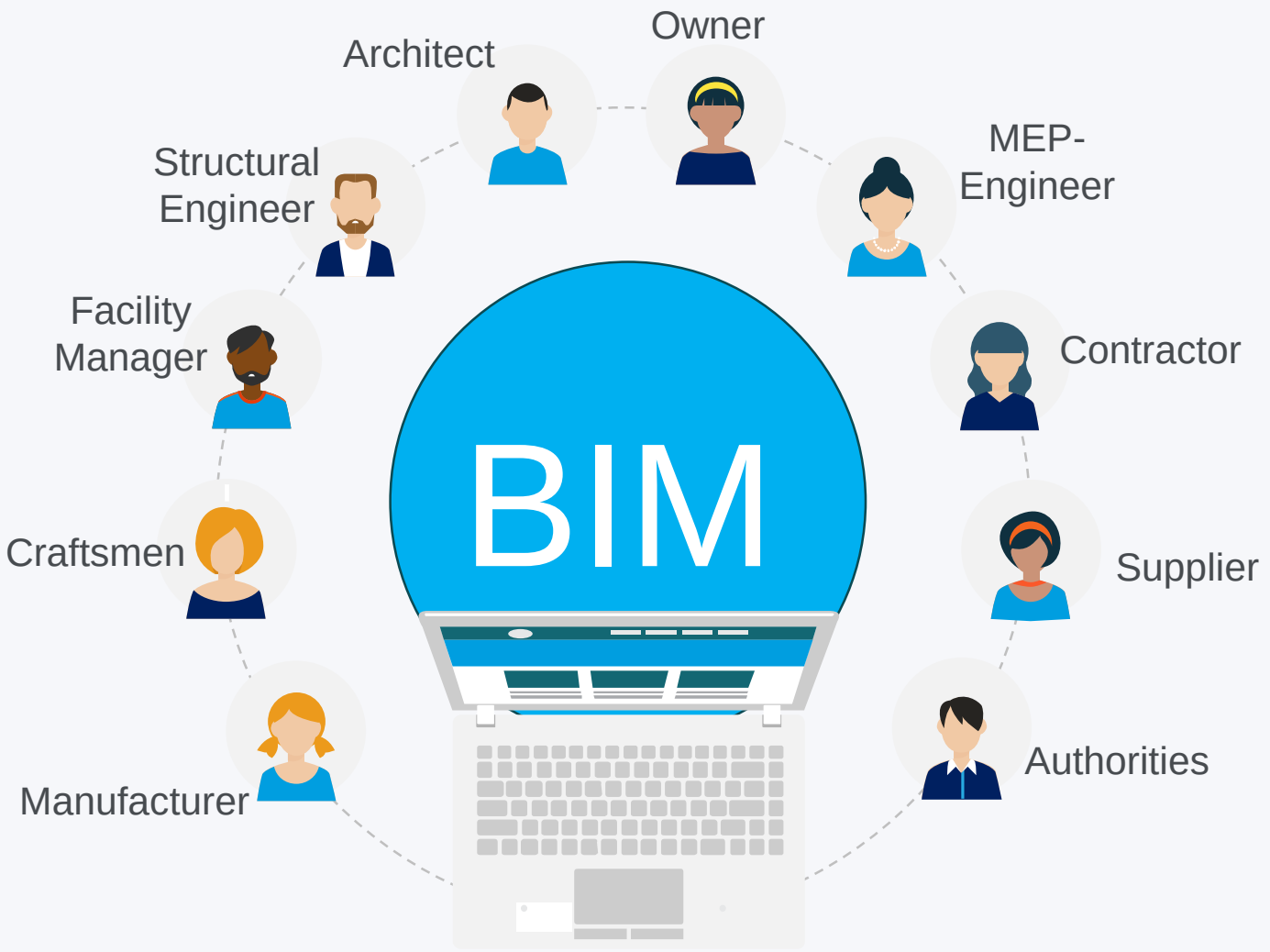
- Pilot Projects
- Standardisation
- Education and Training
- Development of BIM guidelines
- Legal Clarification





CHALLENGE

Complex Method – Complex User Group



Relevant BIM Committees

buildingSMART International home of openBIM

buildingSMART Germany

VDI

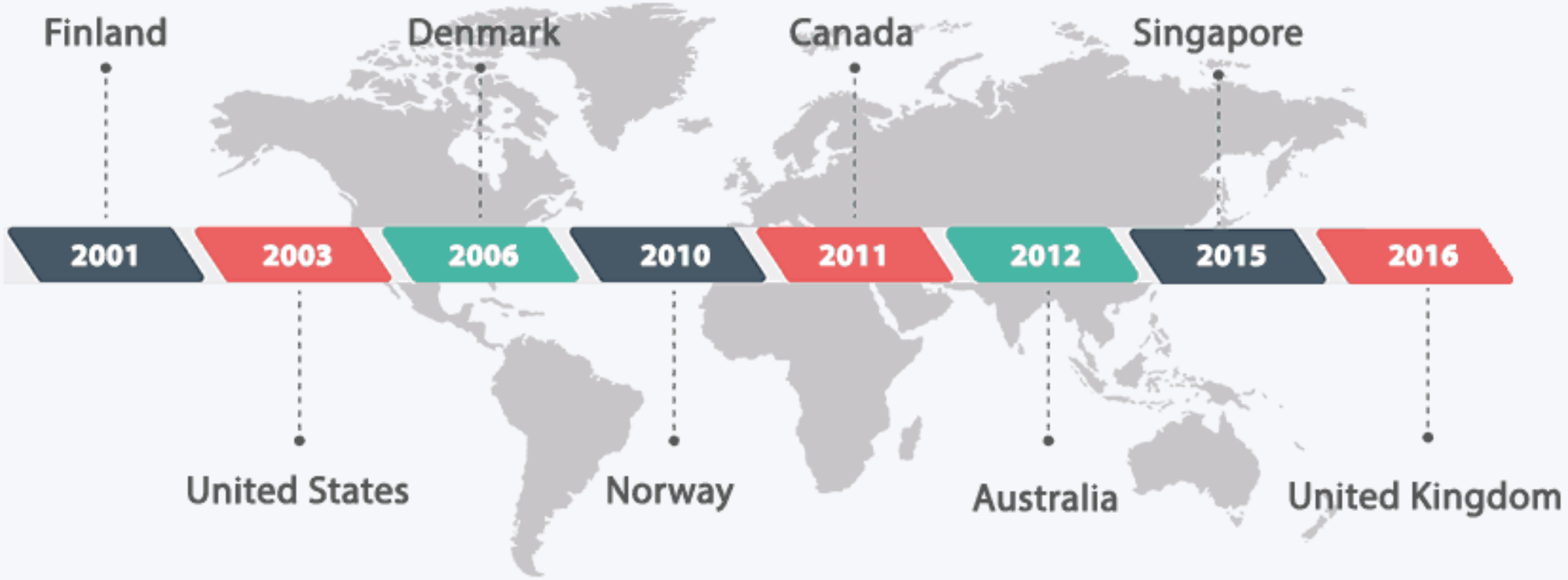
DIN

Association of German Engineers

VDI **VDI 2552 Sheet 1-11 „Building Information Modeling“**

- VDI 2552 Blatt 1: BIM – Fundamentals
- VDI 2552 Blatt 2: BIM – Terminology
- VDI 2552 Blatt 3: BIM – Modelbased Quantity Take-Off for Cost Planning, Scheduling, Awarding and Billing
- VDI 2552 Blatt 4: BIM – Requirements on Data Exchange
- VDI 2552 Blatt 5: BIM – Data Management
- VDI 2552 Blatt 6: BIM – Facility Management
- VDI 2552 Blatt 7: BIM – Processes
- VDI 2552 Blatt 8: BIM – Qualifications
- VDI 2552 Blatt 9: BIM – Classifications
- VDI 2552 Blatt 10: BIM – Employer Information Requirements and BIM Execution Plans
- VDI 2552 Blatt 11: BIM – Information Exchange Requirements

Are national solutions sufficient?



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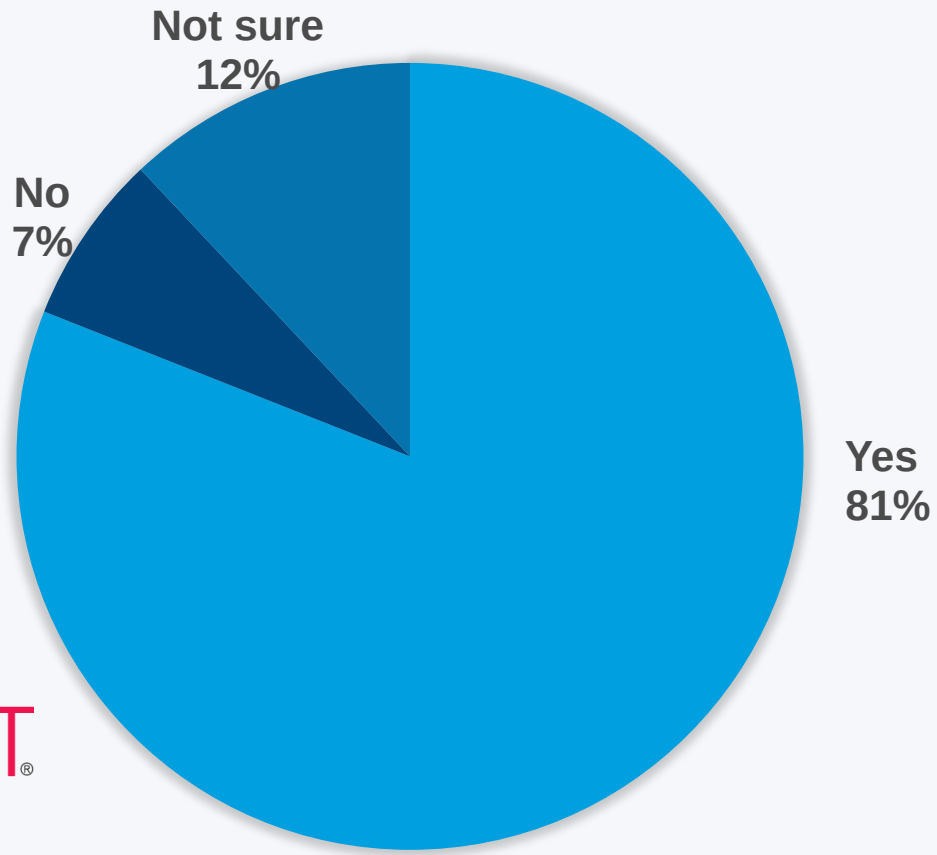
Is international consistent BIM Certification necessary?



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Professional Certification Program

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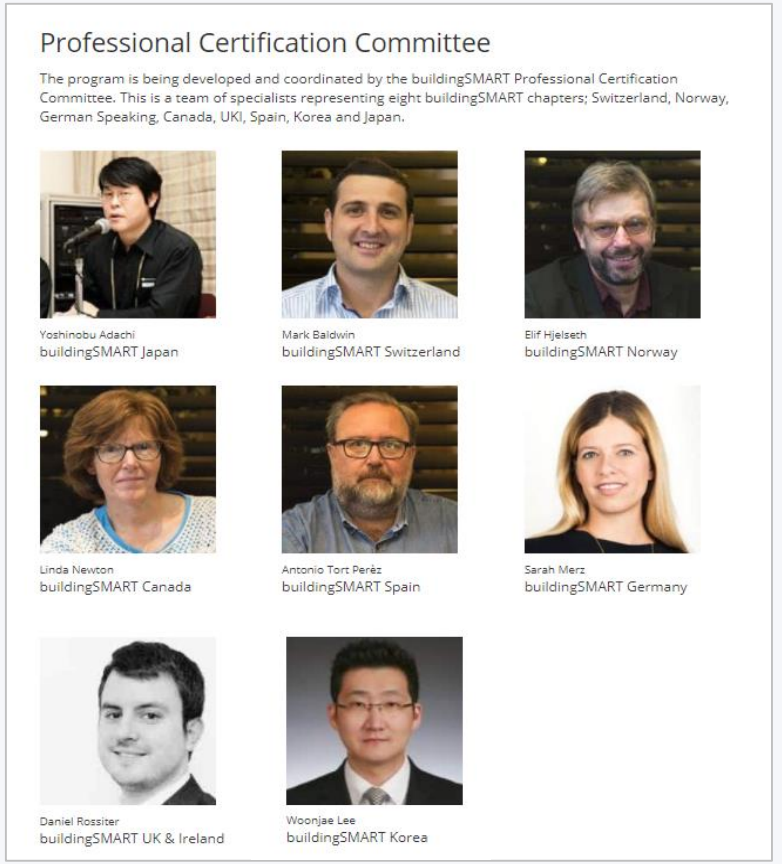
- Certification Program of buildingSMART International
- Development and coordination by international committee



Professional Certification Committee

The program is being developed and coordinated by the buildingSMART Professional Certification Committee. This is a team of specialists representing eight buildingSMART chapters; Switzerland, Norway, German Speaking, Canada, UKI, Spain, Korea and Japan.

Yoshinobu Adachi
buildingSMART Japan

Mark Baldwin
buildingSMART Switzerland

Elif Hjelseth
buildingSMART Norway

Linda Newton
buildingSMART Canada

Antonio Tort Peréz
buildingSMART Spain

Sarah Merz
buildingSMART Germany

Daniel Rossiter
buildingSMART UK & Ireland

Woonjae Lee
buildingSMART Korea

[8]

Why Professional Certification?

Requirements on international standardisation regarding:

- Consistent **understanding of BIM** (terminology and processes)
- Verfiable **qualified BIM professionals** with comparable competence level
- **Global benchmark** for **content of teaching** and certification standards

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Scope of Work buildingSMART International

- **Program initiator** and point of contact for national chapter
- Development of **minimum requirements** on **teaching content**
- **Standardisation** and dissemination of **Open BIM Certifications**
- Development of a **testing tool** for personal certification

Who is the program aimed at?

- Individuals
- Industry organisations
- Training organisations
- buildingSMART chapters

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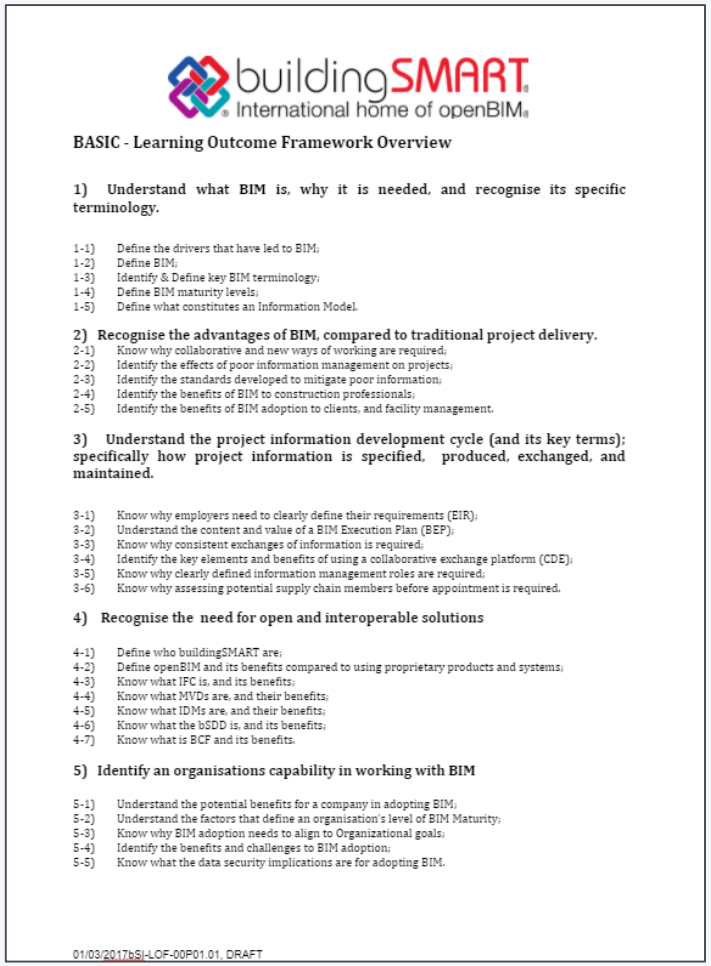

buildingSMART International home of openBIM

BASIC - Learning Outcome Framework Overview

1) Understand what BIM is, why it is needed, and recognise its specific terminology.

1-1) Define the drivers that have led to BIM;
1-2) Define BIM;
1-3) Identify & Define key BIM terminology;
1-4) Define BIM maturity levels;
1-5) Define what constitutes an Information Model.

2) Recognise the advantages of BIM, compared to traditional project delivery.

2-1) Know why collaborative and new ways of working are required;
2-2) Identify the effects of poor information management on projects;
2-3) Identify the standards developed to mitigate poor information;
2-4) Identify the benefits of BIM to construction professionals;
2-5) Identify the benefits of BIM adoption to clients, and facility management.

3) Understand the project information development cycle (and its key terms); specifically how project information is specified, produced, exchanged, and maintained.

3-1) Know why employers need to clearly define their requirements (EIR);
3-2) Understand the content and value of a BIM Execution Plan (BEP);
3-3) Know why consistent exchanges of information is required;
3-4) Identify the key elements and benefits of using a collaborative exchange platform (CDE);
3-5) Know why clearly defined information management roles are required;
3-6) Know why assessing potential supply chain members before appointment is required.

4) Recognise the need for open and interoperable solutions

4-1) Define who buildingSMART are;
4-2) Define openBIM and its benefits compared to using proprietary products and systems;
4-3) Know what IFC is, and its benefits;
4-4) Know what MVDs are, and their benefits;
4-5) Know what IDMs are, and their benefits;
4-6) Know what the bSDD is, and its benefits;
4-7) Know what is BCF and its benefits.

5) Identify an organisations capability in working with BIM

5-1) Understand the potential benefits for a company in adopting BIM;
5-2) Understand the factors that define an organisation's level of BIM Maturity;
5-3) Know why BIM adoption needs to align to Organizational goals;
5-4) Identify the benefits and challenges to BIM adoption;
5-5) Know what the data security implications are for adopting BIM.

01/03/2017bSI-LOF-00P01.01, DRAFT

[9]

Learning Outcome Framework

1) Understand what BIM is, why it is needed and recognise its specific terminology.

2) Recognise the advantages of BIM, compared to traditional project delivery.

3) Understand the project information development cycle (and ist key terms); specifically how project information is specified, produced, exchanged and maintained.

4) Recognise the need for open and interoperable solutions.

5) Identify an organisations capability in working with BIM.

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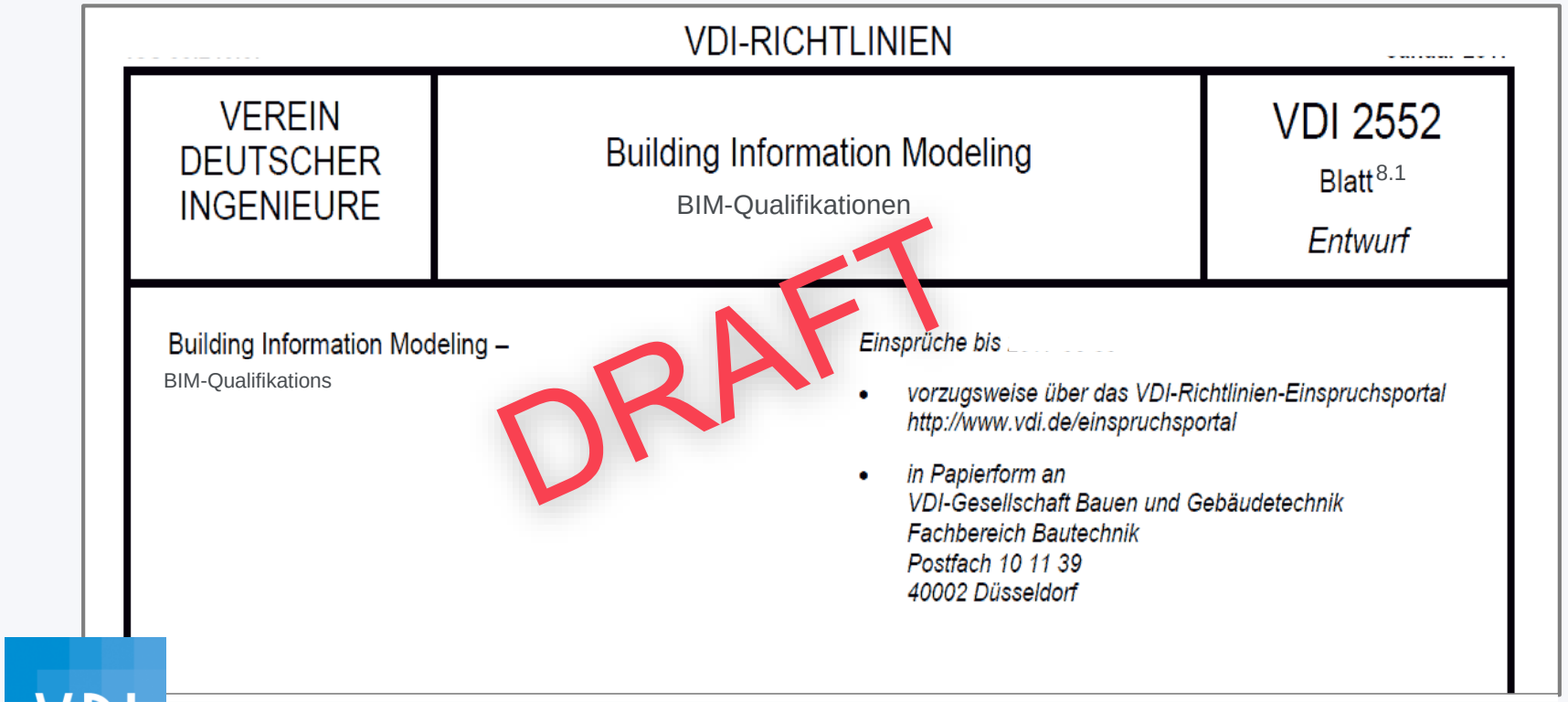
[9]

National Standard „BIM Qualifications“



VDI-RICHTLINIEN

VEREIN DEUTSCHER INGENIEURE	Building Information Modeling BIM-Qualifikationen	VDI 2552 Blatt 8.1 *Entwurf*

Building Information Modeling –
BIM-Qualifikations

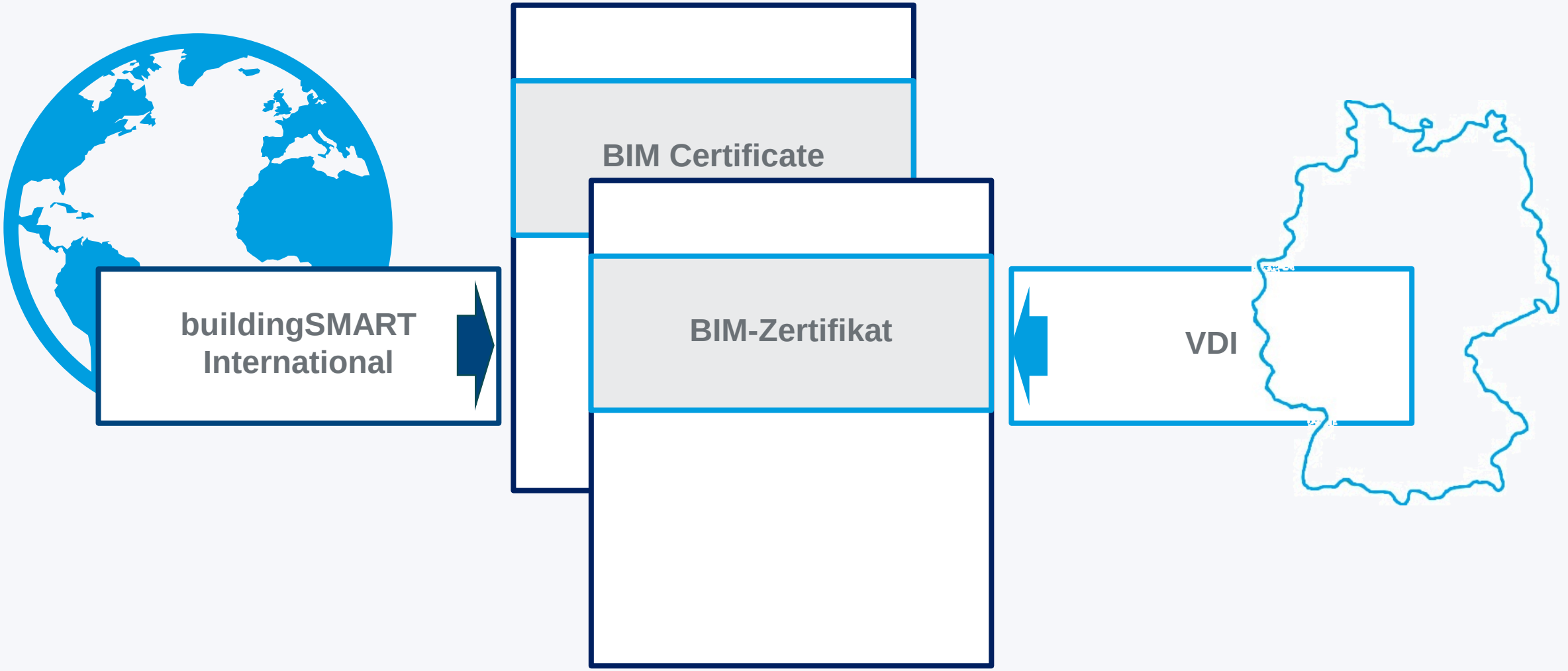
DRAFT

Einsprüche bis

- *vorzugsweise über das VDI-Richtlinien-Einspruchsportal http://www.vdi.de/einspruchsportal*
- *in Papierform an*
  VDI-Gesellschaft Bauen und Gebäudetechnik
  Fachbereich Bautechnik
  Postfach 10 11 39
  40002 Düsseldorf

[10]

Cooperation of Committees



Cooperation of Committees

Continuous comparison of bSI LOF and VDI standard

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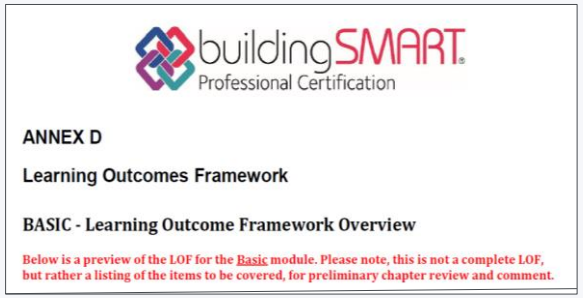

buildingSMART Professional Certification

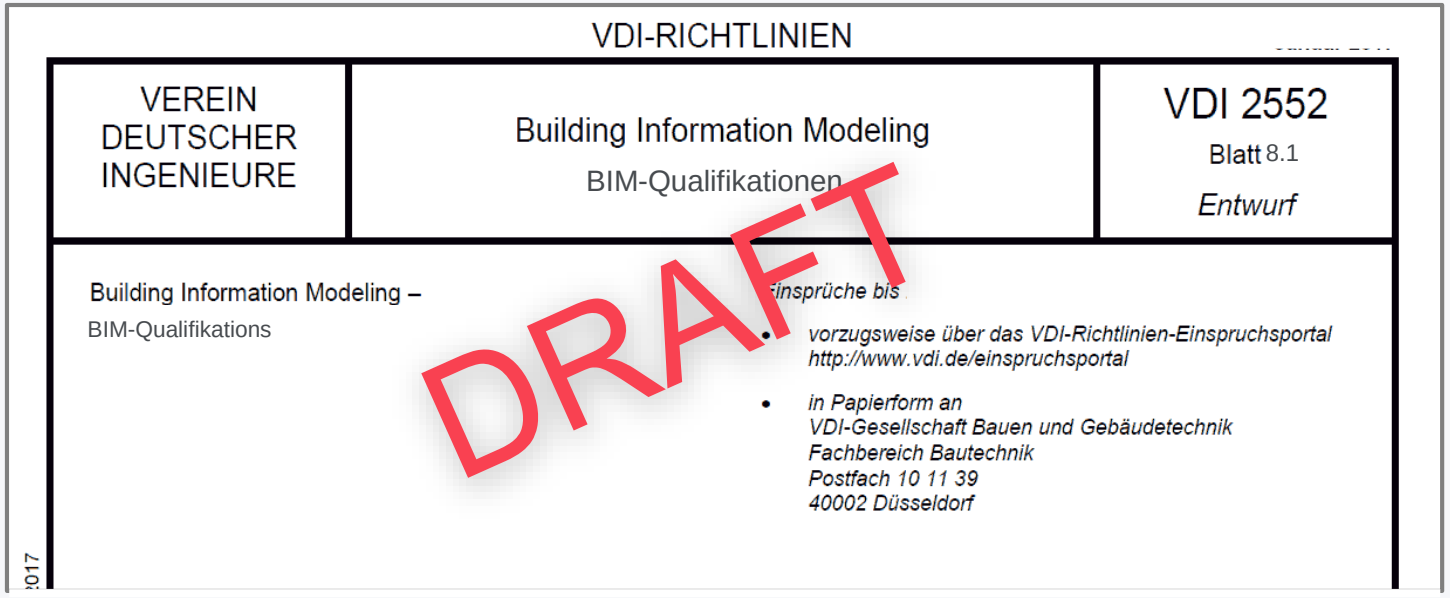
ANNEX D

Learning Outcomes Framework

BASIC - Learning Outcome Framework Overview

Below is a preview of the LOF for the Basic module. Please note, this is not a complete LOF, but rather a listing of the items to be covered, for preliminary chapter review and comment.

→ **VDI/buildingSMART 2552 Sheet 8.1 „BIM – Qualifications"**


VDI-RICHTLINIEN

VEREIN DEUTSCHER INGENIEURE

Building Information Modeling

BIM-Qualifikationen

VDI 2552

Blatt 8.1

Entwurf

Building Information Modeling –

BIM-Qualifikations

DRAFT

Einsprüche bis

- *vorzugsweise über das VDI-Richtlinien-Einspruchsportal http://www.vdi.de/einspruchsportal*
- *in Papierform an VDI-Gesellschaft Bauen und Gebäudetechnik Fachbereich Bautechnik Postfach 10 11 39 40002 Düsseldorf*

Tasks buildingSMART Germany

- **Expansion** of bSI **LOF by national specifics** and development of thereto related questions

→ **National Module 6**

6) Understand the national specifics when working with BIM

6-1) Define the relevant national standards and guidelines
6-2) Understand the scope of work, as described in HOAI
6-3) Identify BIM-specific requirements with tender and awarding
6-4) Understand German law concerning liability, data security and copyright
6-5) Know the national institutions dealing with BIM
6-6) Understand the contract systems being used in BIM projects

[11]

Tasks buildingSMART Germany

- **Expansion** of bSI **LOF by national specifics** and development of thereto related questions
- **Development of approval requirements, documents and contracts** for training organizations

[12]

Tasks buildingSMART Germany

- Provider of **online assessment tool**
- Provider of **certificate**
- **Contact partner** for public authorities and course providers

[13]

To be excited about…

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- **Official program launch**: April 18th, 2018 ✓
- **Approval** of first course providers: 2nd Quarter 2018
- **Certification** of first individuals: 3rd Quarter 2018
- Developing „**Professional Knowledge**“ Ongoing

Worldwide Program Implementation

buildingSMART International

CONTACT

Questions & Comments

Sarah Merz
Head of Education Center

DEUBIM GmbH
Fasanenstr. 68
10719 Berlin
E: sarah.merz@deubim.de
P: +49 (0)162 2700 459

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[4] http://www.nbcireland.ie/roadmap/ (last downloaded on 1st of June 2018)

[5] https://www.bmvi.de/SharedDocs/DE/Publikationen/DG/stufenplan-digitales-bauen.pdf?__blob=publicationFile (last downloaded on 1st of June 2018)

[6] http://specifiglobal.com/de/lernen/building-information-modeling/ (last downloaded on 1st of June 2018)

[7] Survey, buildingSMART International, 2016

[8] https://education.buildingsmart.org/team/ (last downloaded on 24th May 2018)

[9] buildingSMART International

[10] VDI/bS 2552-8.1:2017-12 (Draft)

[11] buildingSMART Germany (Draft)

[12] buildingSMART Germany (Draft)

[13] buildingSMART International (Draft)

[14] cf. buildingSMART International

[15] https://education.buildingsmart.org/ (last downloaded on 1st of June 2018)