2022 Excellence Seminar

supported by

NOVA BIM

Excellence Seminar

Day 1 is hosted by

Prof Regina Coeli Ruschel

University of Campinas, São Paulo, Brazil

The BIMe Initiative is a not-for-profit knowledge generation and sharing effort by volunteer researchers from across industry and academia

The BIMe Initiative delivers an innovative response to the challenges of digital transformation faced by the Built Environment

BIMe INITIATIVE

we are researchers

professors + students

practitioners + academics

we live in 42+ countries

our mission

accelerate the digital transformation of the Built Environment

BIMe INITIATIVE

our vision

demonstrating new ways
of thinking, researching,
learning & collaborating

BIMe INITIATIVE

our goals

helping practitioners to improve their *digital* competence

assisting organisations to adopt, adapt, and innovate practical *digital* solutions

supporting policy makers in improving *digital* transformation strategies

Day 1 Welcome

Session 1 Digital Transformation Efforts
Session 2 Macro Adoption Study - Phase III launch

Short Break

Session 3 Supporter Session - NovaBIM
Session 4 Model Use Templates – Project Update

Day 1 Summary

send questions after the session through the **Contact US** page

materials will be available Dec 15 on **Seminar's** page

recordings will be available on the **BIMei Channel**

share your thoughts on social media

#ExcellenceSeminar

Session 1

Digital transformation efforts from across the world - lessons learned from six regions

In this session, drivers and champions of international initiatives will discuss their unique experiences and share the lessons to be learned and the challenges to be overcome when promoting digital transformation efforts

Carolina Soto Ogueta

Executive Director, Planbim_Corfo, Chile

Carolina Soto is the Executive Director of **Planbim_Corfo** (Corporación de Fomento de la Producción), a program of the Chilean government that promotes the use of BIM for public projects. Since its beginning in 2015, she leads this initiative which aims to foster the digital transformation of the AEC industry at a country level. In addition, she was Chair of the **Latin American BIM Governments Network** from 2019 to 2022, and is currently a partner at **Factor Digital**, a consulting firm focused on Digital Transformation. She is an architect from the **Pontificia Universidad Catolica de Chile** and holds a Master of Science degree in Design and Computation from the **Massachusetts Institute of Technology** (MIT).She has worked both in the development and application of digital technologies in the AEC industry in Chile and the United States, focusing particularly on BIM and its standardization. In addition, she has taught and researched about this and other digital technologies at various universities

BIM adoption strategy in Chile

Carolina Soto
Executive Director Planbim Corfo

Excellence Seminar BIMe Initiative
Novembre 15th, 2022

Planbim Strategy

1

Goals (Defined in 2016)

Participants Organizations

18 Institutions

Led by: Corfo - Ministry of Economy

Ministry of Housing
Ministry of Public Works
Ministry of Finance
Chilean Chamber of Construction
Construction Institute
And others

Challenges of implementing BIM from public sector in Chile in 2015

- Very low productivity in the construction industry
- Very low levels of use of BIM by the industry & confusion about what BIM was
- No culture of using standards for information management
- BIM was not being widely taught in universities and institutes
- Industry and State were (are) not used to measuring projects results
- There was (is) no base lines or consolidated database of public projects

Standardization

2

Adopt & **ADAPT** international experience

Base of 19 standardized EIRs from ministries, Air force and Judiciary Power:

- Antarctic Base
- Airports
- Subsidized housing
- Hospitals
- Bridges
- Educational centers
- Heritage buildings
- Sports venues
- Urban parks
- others

BIM Standard for Public Projects, 2019

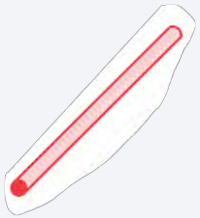
Spanish, English & Portuguese versions + than 41.000 downloads

Download: www.planbim.cl/documentos

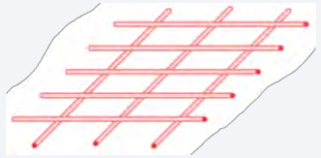
Alignment with international standards

Name	Document	Key Concepts Correspondence to Chilean BIM Std
IDM	ISO 29481-1 & 2: 2016 & 2012	
IFC	ISO 16739-1:2018	Interoperable Format
BCF	buildingSMART BCF	
IFD	ISO 12006-3: 2007	
MVD - Model View Definition	buildingSMART MVD	
COBie	BS 1192-4: 2014	Minimum Parameters
IDM **BIM Basic Information Delivery Manual**	BIM Basic Information Delivery Manual - version 1.0	
ISO BIM 1 & 2	ISO19650-1 & 2: 2018	Definitions & other
Collaborative production of AEC information	BS 1192:2007	Naming & Codes
Project Building Information Protocol Form	AIA Document G202-2013	NDI
Level of Development Specification	Level of Development Specification BIM Forum USA	
Project Execution Planning Guide version 2.1	BIM Planning at Penn State	BIM Uses
US Veterans Affairs Object/Element Matrix	VA BIM Guide	TDI

Guide for IFC entities for reinforcement elements

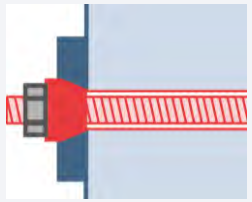


Bars
(IfcReinforcingBar)



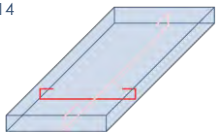
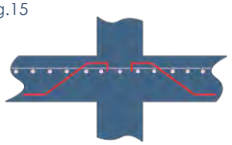
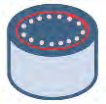
Mesh
(IfcReinforcingMesh)

Tendon
(IfcTendon)



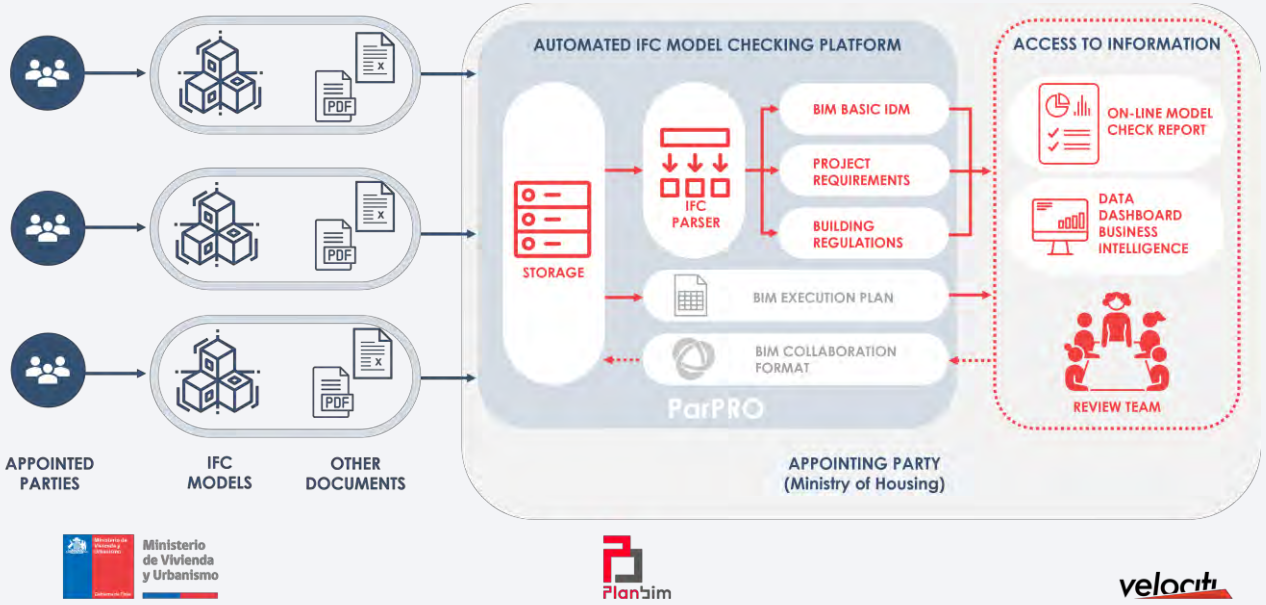
Tendon anchor
(IfcTendonAnchor)

TABLA 10: TIPOS PREDEFINIDOS DE LUGAR DE BARRA DE REFUERZO (IfcReinforcingBar)

TIPOS PREDEFINIDOS	TRADUCCIÓN	DESCRIPCIÓN	FIGURA
ANCHORING	ANCLAJE	Refuerzo de anclaje.	Fig.11 
EDGE	BORDE	Refuerzo de borde.	Fig.12 
LIGATURE	ESTRIBO	Refuerzo de amarre (por ejemplo, una liga o un estribo).	Fig.13 
MAIN	PRINCIPAL	Barra de refuerzo principal.	Fig.14 
PUNCHING	PUNZONANTE	Refuerzo de punzonamiento.	Fig.15 
RING	ANILLO	Refuerzo de anillo.	Fig.16 
SHEAR	CORTE	El refuerzo es una barra de corte.	Fig.17 
STUD	PERNO	La barra de refuerzo es un perno.	Fig.18 
USERDEFINED	DEFINIDO POR USUARIO	Cualquier otro refuerzo que no pertenezca a las categorías anteriores.	

BIM in public projects (2020 goal)

PARPro:
Automated Project Review Platform

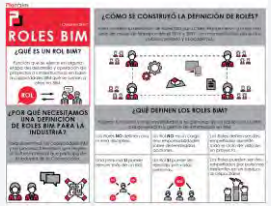


- Uses interoperable formats
- Speeds up reviews
- No need to purchase licenses
- Users don't need to know BIM
- Integrated to Ministry systems
- Proof of concept for possible future building permits system integration

Human capital actions

3

BIM Education



BIM Roles Matrix

5 roles with competencies and experience needed

Corfo Human Capital Scholarships

+ than 1,500 trained

e-learning BIM Methodology

+ than 10,000 trained

e+bim: BIM in technical high schools

48 schools, approx. impact.: 1,800 students

Measuring results

4

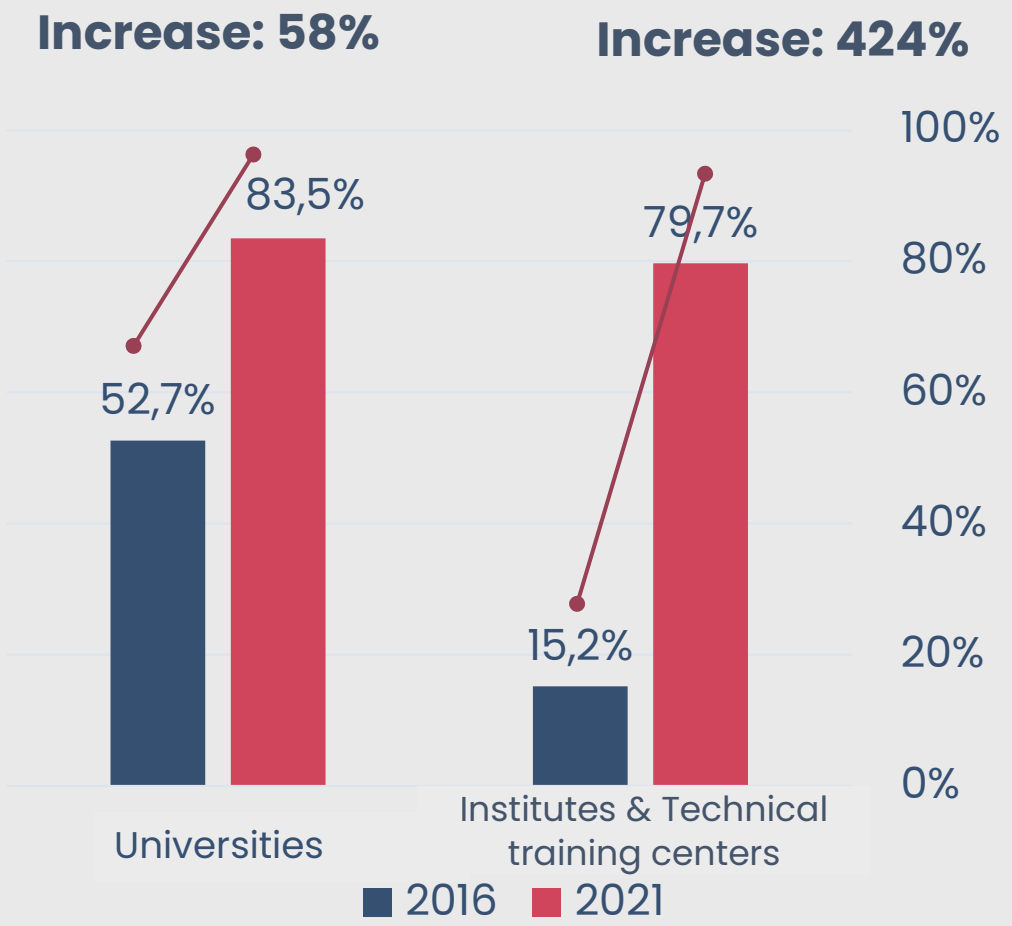
BIM Observatories

Download: www.planbim.cl/documentos

www.planbim.cl

BIM Observatory of Higher Education

Academic programs with BIM 2016-2021



Source 2016 : *Diagnóstico de la situación actual de formación de capital humano en BIM en Chile,* PMG para Planbim

Source 2021: Planbim

Planbim

BIM Observatory of public projects

2013 - 2020

1.990
tenders

Ministry of Public Works

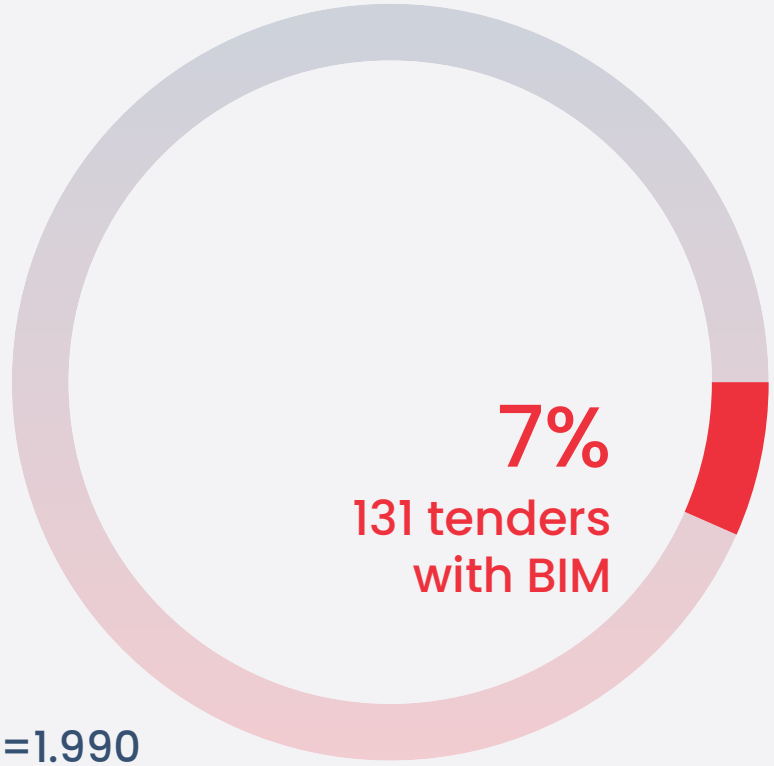
Ministry of Health

Judiciary Power

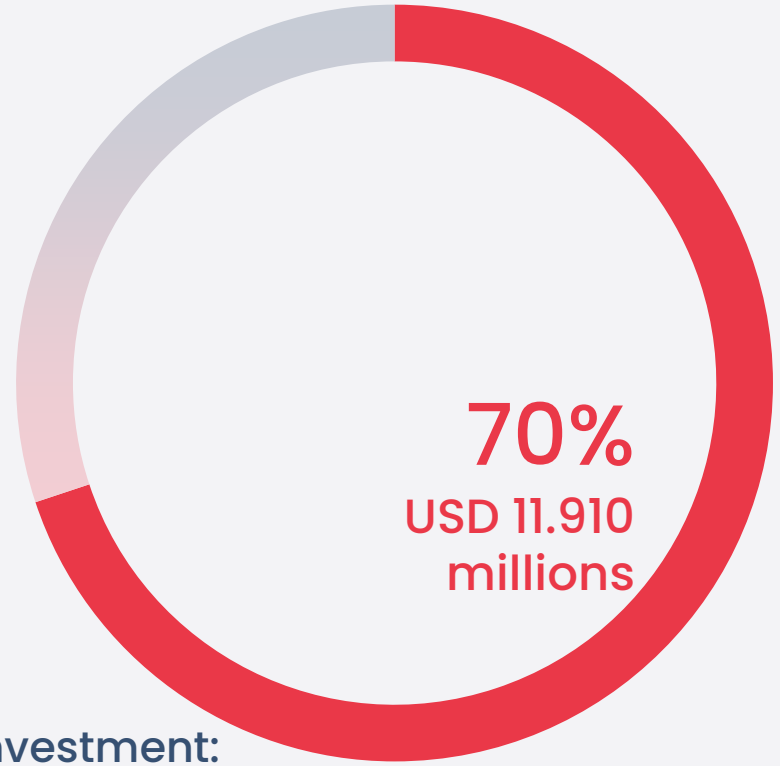
Planbim

BIM Observatory of public projects

Tenders with BIM requirement



N=1.990



Total investment:
USD 17 billion

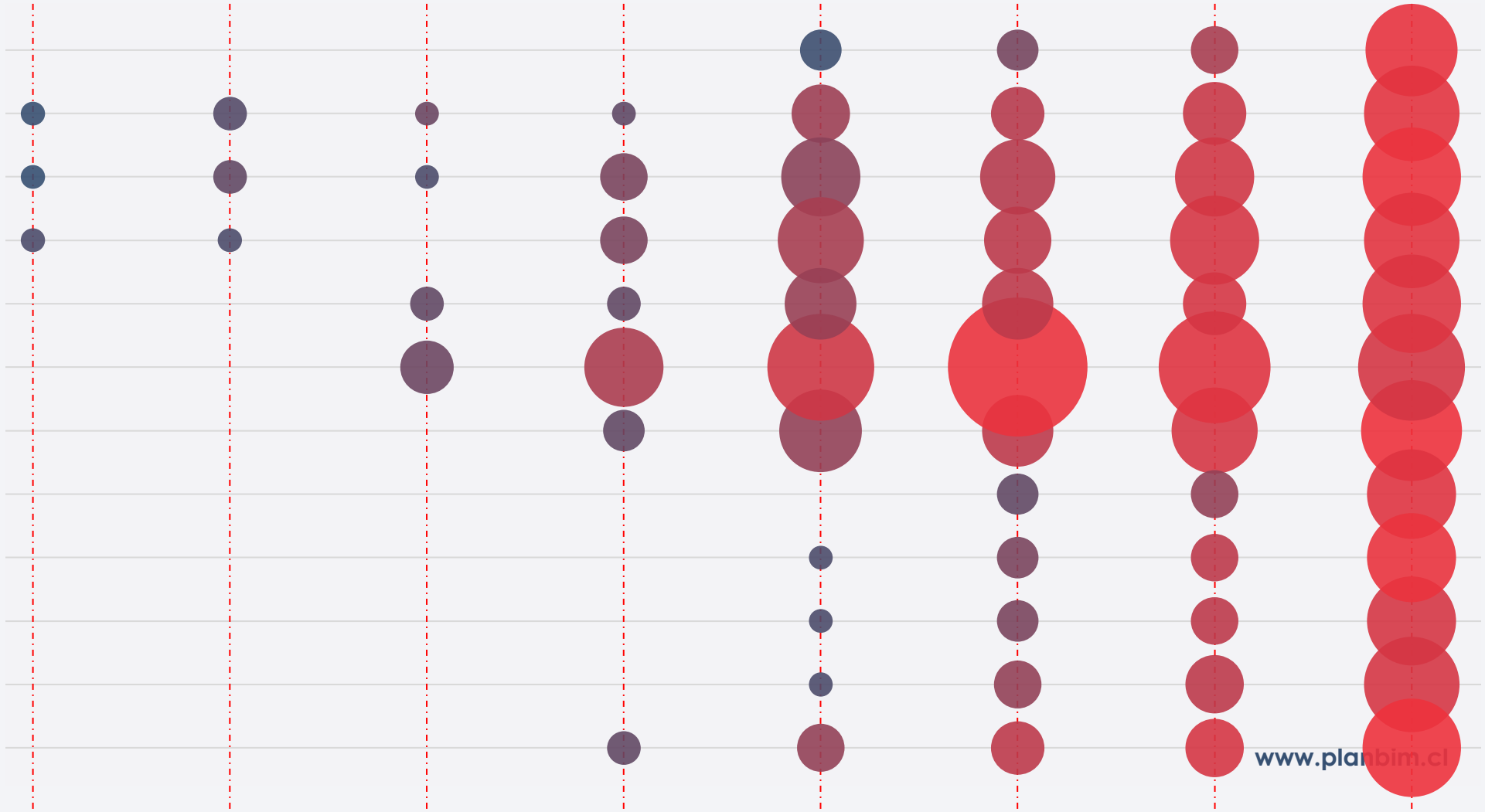
Planbim

Public Tenders with BIM | BIM Fórum Chile | Presidential Announcement | Planbim | BIM Roles Matrix | Public Works BIM EIR | BIM Standard Housing Works BIM EIR | BIM Goal

Year of award
(Number of tenders requesting BIM)

2013 N=2 | 2014 N=4 | 2015 N=6 | 2016 N=11 | 2017 N=23 | 2018 N=40 | 2019 N=24 | 2020 N=21

1. BIM as an integral part
2. BIM objectives
3. BIM Uses
4. Definition of deliveries
5. Levels of Information
6. BIM Roles
7. Interoperable formats
8. Classification System
9. CDE
10. Collaboration Strategy
11. BIM Execution Plan
12. Reference to standards



www.planbim.cl

Lessons learned
(or How we overcame the challenges)

- Get support from the authorities
- Have a dedicated team and define a leadership and spokesperson
- Adopt and ADAPT international experience and information, try to look for experiences that are similar in terms of economy, culture, etc.
- Work collaboratively with industry and communicate constantly
- Measure
- Generate tools (material) to bridge the gaps: training, guides, standards, etc.

Thanks

Carolina Soto
Executive director Planbim Corfo

carolina.soto@planbim.cl

Planbim Plan_BIM @planbim YouTube

www.planbim.cl

Prof John Messner

Director, CIC Research Program | Penn State University, USA

Dr. Messner is the Director of the **Computer Integrated Construction (CIC) Research Program** and a Charles and Elinor Matts Professor of Architectural Engineering both at **Penn State**. He is an expert in Building Information Modeling (BIM), lean project delivery, and immersive technologies. The CIC Research Group developed the **BIM Project Execution Planning Guide** and **BIM Planning Guide for Facility Owners**, which are both incorporated into the U.S. **National BIM Standard**. Dr. Messner is a former Task Lead in the Building Energy Informatics task at the Consortium for Building Energy Innovation (CBEI) and has received multiple National Science Foundation grants for investigating the application of advanced visualization in construction engineering education and the AEC Industry. Dr. Messner is the Chair of the US National BIM Standard Project at the National Institute of Building Sciences (NIBS) and a Board of Directors member for the **Lean Construction Institute**. He received the 2021 Distinguished Service Award from NIBS, the 2021 Computing in Civil Engineering Award from ASCE, and is a member of the **National Academy of Construction**. He has taught classes in virtual prototyping; BIM; strategic management in construction; international construction; and project management at Penn State.

BIM Standardization Initiatives in the United States

John Messner
Charles and Elinor Matts Professor, Penn State University
Director, Computer Integrate Construction (CIC) Research Group
Chair, U.S. National BIM Standard Planning Committee, NIBS

PennState College of Engineering | ARCHITECTURAL ENGINEERING

Virtual Mock-ups
Integrated Systems
Information Standards
Behavior
Modularization
BIM
Process Design
Innovation
Experienced-based Design
Sustainability
Simulation
Decision Making
Augmented Reality
PENN STATE
COMPUTER INTEGRATED
CONSTRUCTION
Virtual Reality
Automation
Visualization
Team Selection
Integrated Delivery
Boundary Management
Collaboration
Serious Games
Design Pedagogy
Cloud computing
Digital Twins
Lean Planning
Robotics
High Performance Buildings

PennState College of Engineering | ARCHITECTURAL ENGINEERING

State of BIM in Practice in U.S.

- $1.8 billion U.S. construction market with 80% private sector[1]
- High levels of adoption in building construction with growing levels of adoption in infrastructure
- Varied levels of owner BIM requirements
  - Many strong government requirements for buildings (e.g., USACE, GSA)
  - Varied private sector requirements
- Many delivery teams understand the value of cost-effective BIM uses, although delivery to owners is mixed
- BIM adoption frequently focused on authoring and coordinating designs

[1] Source for Market Size: https://www.census.gov/construction/c30/c30index.html

Challenges, Path Forward, and Lessons Learned

Challenges

Challenges

- Adoption is varied, inconsistent
- Owner adoption for lifecycle benefits
- Balancing Innovation & Efficiency
  - What should be standardized? When should we standardize?
- Going beyond design and coordination with BIM
  - Need to expand
- OpenBIM is limited in practice

The nice thing about standards is that you have so many to choose from.

Andrew S. Tanenbaum

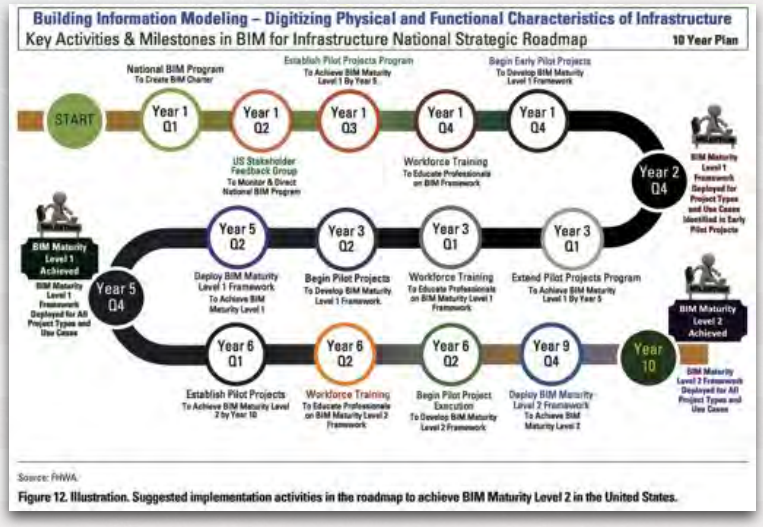
Computer Networks, 2nd ed., p. 254

Many BIM Standards Activities, Challenging to Integrate

- National Institute of Building Sciences - BIM Council
- buildingSMART USA Chapter / buildingSMART International
- BIM Forum
- ASHRAE
- Construction Progress Coalition
- CSI OmniClass
- Membership societies/associations (e.g., AIA, DBIA, AGC, etc.)
- Government Owner Programs (e.g., FedBIM, USACE – Industry BIM Consortium, etc.)
- International Standards Organization (ISO)

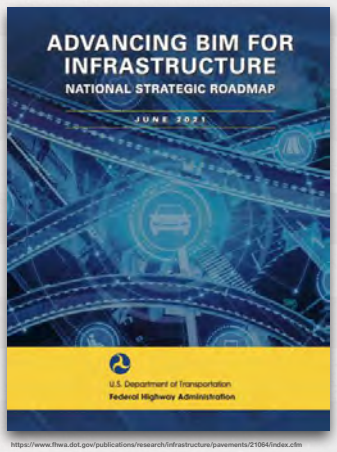
Path Forward

Expanding into Infrastructure



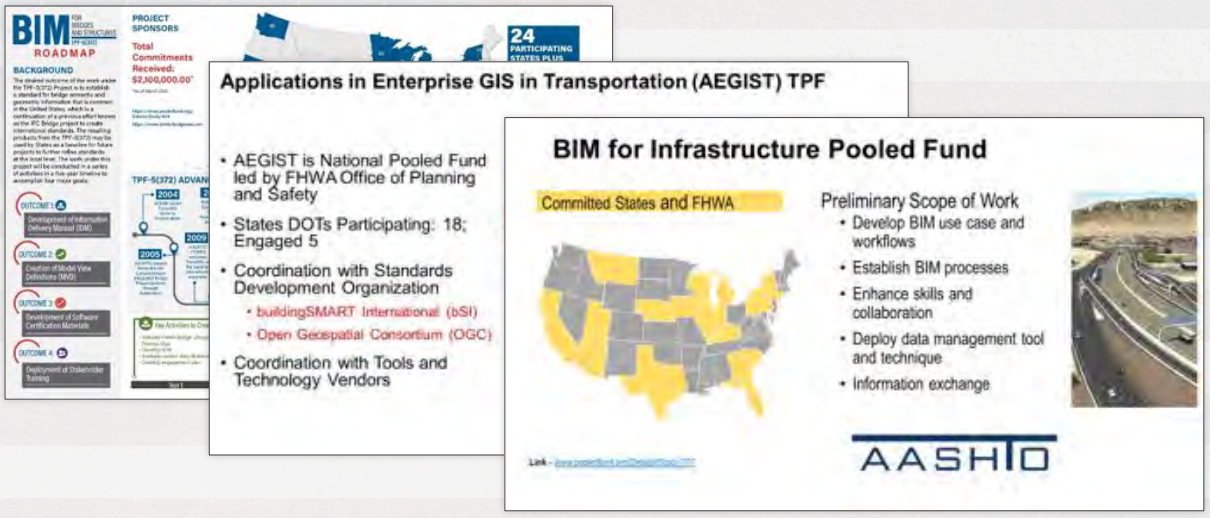
Source: FHWA.

Figure 12. Illustration. Suggested implementation activities in the roadmap to achieve BIM Maturity Level 2 in the United States.



https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/21064/index.cfm

AASHTO Transportation Pooled Fund Efforts



U.S. National BIM Program

The Plan

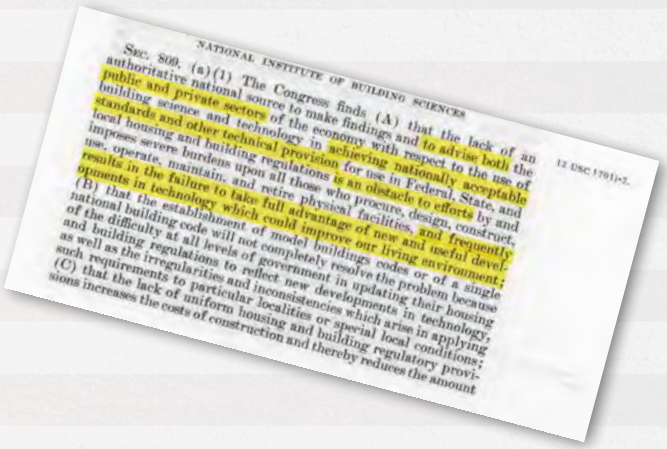
Summary

National Institute of BUILDING SCIENCES

https://www.nibs.org/usbimprogram

NIBS Background

- Established by an act of US Congress in 1974
- Recognizes the lack of an authoritative source to make findings and to advise both public and private sectors is a burden to all
- Targets nationally acceptable standards and procedures


NATIONAL INSTITUTE OF BUILDING SCIENCES

SEC. 809. (a)(1) The Congress finds (A) that the lack of an authoritative national source to make findings and to advise both the public and private sectors of the economy with respect to the use of building science and technology in achieving nationally acceptable standards and other technical provision for use in Federal, State, and local housing and building regulations is an obstacle to efforts by and imposes severe burdens upon all those who procure, design, construct, use, operate, maintain, and retire physical facilities, and frequently results in the failure to take full advantage of new and useful developments in technology which could improve our living environment; (B) that the establishment of model) buildings codes or of a single national building code will not completely resolve the problem because of the difficulty at all levels of government in updating their housing and building regulations to reflect new developments in technology, as well as the irregularities and inconsistencies which arise in applying such requirements to particular localities or special local conditions; (C) that the lack of uniform housing and building regulatory provisions increases the costs of construction and thereby reduces the amount

12 USC 1701j-2.

National Institute of BUILDING SCIENCES

U.S. NATIONAL BUILDING INFORMATION MANAGEMENT (BIM) PROGRAM

Program Vision

To accelerate the digital transformation of the built asset industry to achieve optimal economic, environmental, and functional performance of U.S. built environment.

Program Mission

To transform lifecycle information management practices by creating and advancing the consistent adoption of next-generation information management standards and practices to significantly improve the built environment delivery and operations processes.

National Institute of BUILDING SCIENCES

NATIONAL BIM PROGRAM GOALS

Next Generation Standards

Develop next generation process and information BIM standards to a level of implementation that can be validated for contractual compliance along with deployment guidance and resources

Support Owner Adoption

Support the development, collection, management, use and sharing of information models for all asset owners

Improve Project Delivery

Enable all key stakeholders to significantly improve the project delivery process and facility performance by adopting BIM

Build Communities

Build a community that represents all key stakeholders to develop, promote and adopt leading practices for BIM implementation in collaboration with partner organizations

Create Legal Framework

Create the legal and insurance framework(s) to support adoption including a focus toward using the model content for project commitments and contracts

Educate and Train

Create education, training, and certification programs in collaboration with partner organizations to support the evolving workforce demands

PROGRAM WORKSTREAMS

SIX CORE PLANNING WORKSTREAMS

Owner Leadership

Project Team Implementation

Standards and Guidance

Stakeholder Engagement

Education and Training

Legal and Insurance

https://www.nationalbimstandard.org/nbims-us-v3/standard

A Vision for the United States

National Building Information Management Standards & Guidelines

"To develop a clear, industry focused set of standards and guidelines that can be used by capital facility (buildings and infrastructure) owners and teams to define their information requirements, procure the services needed to successfully obtain quality information, and enable a project team to effectively deliver a high quality facility along with facility asset information."

For NBIMS Version 4

Lessons Learned

Lessons Learned

- We are making progress, slowly
- BIM Standards are Political
  - A sound foundation is beneficial but not sufficient
- We must make it easy. Standards can help (or harm).
- We must work together!

Thank You!

BIM Standardization Initiatives in the United States

John Messner
Charles and Elinor Matts Professor, Penn State University
Director, Computer Integrate Construction (CIC) Research Group
Chair, U.S. National BIM Standard Planning Committee, NIBS

Moses Itanola

Executive Director, BIM Africa, Nigeria

Moses Itanola is the Executive Director of **BIM Africa**. He is a Quantity Surveyor and Construction Manager (PMP) advancing sustainability and technology in the African Construction Industry. He is a **Country co-Editor** (Nigeria) in the global BIM Dictionary. Moses is also an **IFC EDGE Expert**, **2021 Local Pathway Fellow**, and represents BIM Africa at the Global Alliance for Buildings and Construction (**GlobalABC**) hosted by the United Nations Environment Programme (UNEP). As a Pan-Africanist, he has participated in numerous design and construction projects and presented at conferences across various African countries.

AFRICA RISING:

Digital Disruption across the Built Environment

BIM.Africa

BUILDING INFORMATION MODELLING AFRICA INITIATIVE

CanBIM

BIM COMMUNITY AFRICA

India BIM Association ibima.co.in

ZIGURAT

BIM4TURKEY

ORACLE Construction and Engineering

AUTODESK

BIM A+

Co-funded by the Erasmus+ Programme of the European Union

UN environment programme

Global Alliance for Buildings and Construction







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28th & 29th October - 2019
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REAL ESTATE
DEVELOPMENT SUMMIT
Panel Discussion on
"Impact of Technology in The Changing Game of Real Estate"



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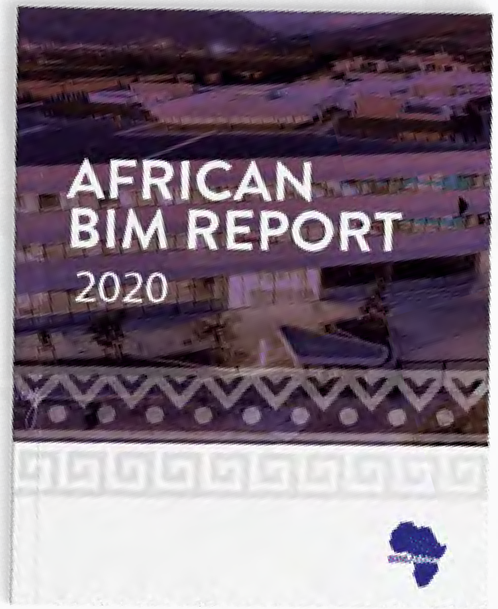
AUTODESK. Make anything.
ARE YOU


The African-wide advocacy is reinforced by extensive academic and market research programs, certification programs, roundtable meetings, seminars and webinars, formulation of locally adapted standards, chapters, volunteering, and professional development opportunities.



Our Volunteer Network

Academics + Practitioners + Researchers + Students + Advocates + Trainers


BIM AFRICA SUMMIT 2023
Continuum
Digital Advancement of the Built Environment for a Sustainable Africa
Marrakech, Morocco
18th & 19th May 2023
Pre-Register at
www.summit.bimafrica.org


AFRICAN
BIM REPORT
2022


تقرير
نمذجة معلومات البناء
الأفريقي ٢٠٢٢


RAPPORT
BIM AFRICAIN
2022

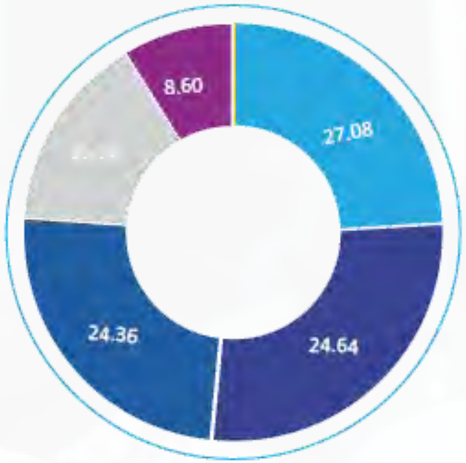
1,100
survey entries

39
countries

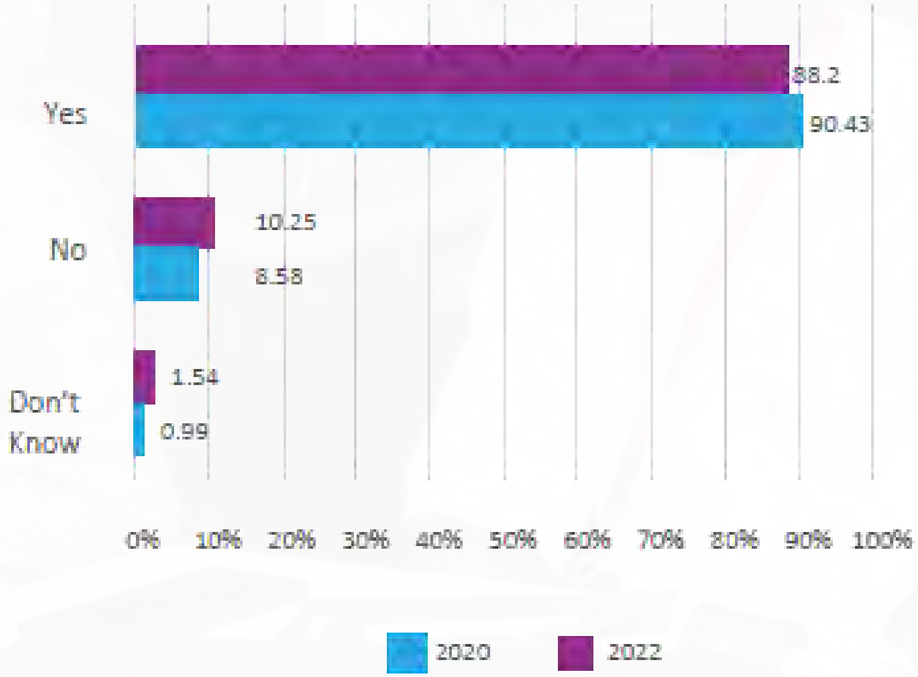
3
languages

5
expert opinion

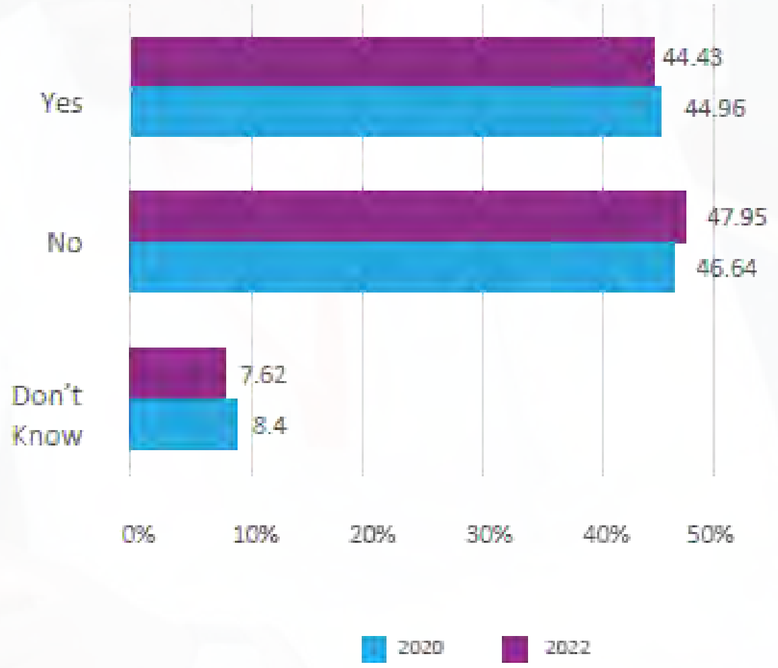
5
project showcase



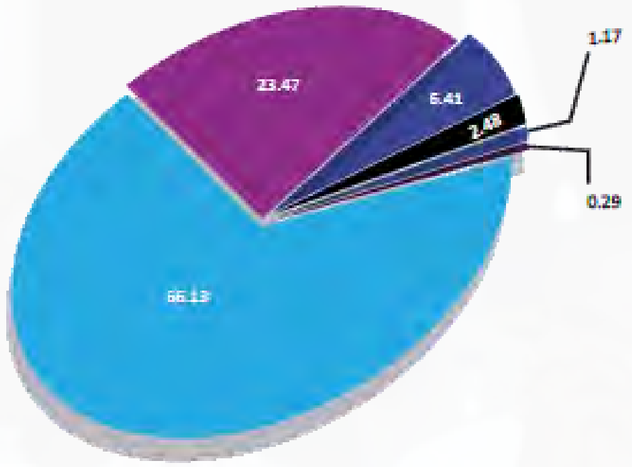
Central Africa
North Africa
East Africa
Southern Africa
West Africa



Awareness of Building Information Modelling

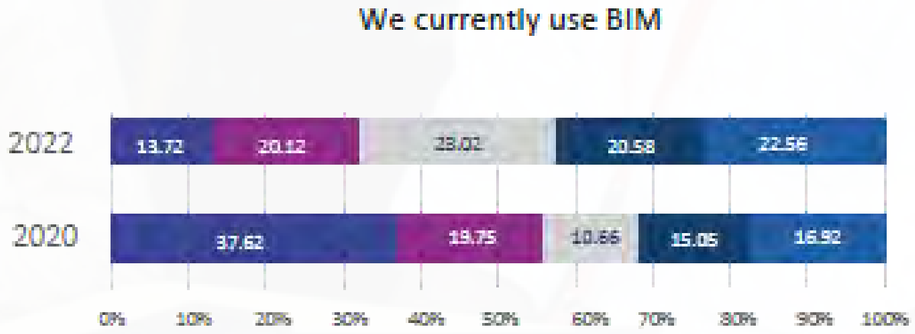


Adoption of Building Information Modelling

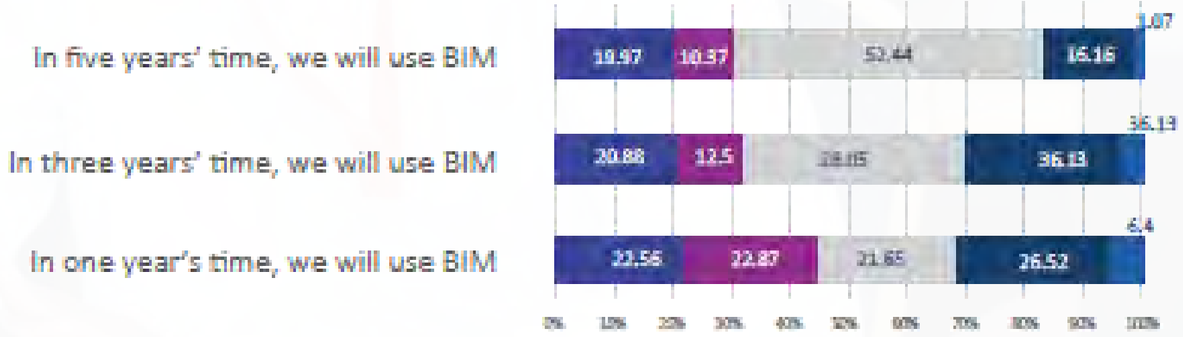


None BS1192 PAS1192-1 ISO 19650 NBIMS-US Others

2020: In one year's time, we will use BIM (i.e 2021)
2020: In three years' time, we will use BIM (i.e 2023)
2022: We currently use BIM



Don't Know For a minority of projects For all projects For the majority of projects Never



Don't Know For a minority of projects For all projects For the majority of projects Never

Challenges faced

'Emerging economy' challenges: low- to middle-income, knowledge deficit, quackery, infrastructure gap, funding, and currency instability.

Reluctance to invest in technology (soft & hard), resistance to change from traditional practises, and lack of commitment.

Missing regulatory frameworks, policies, public support, and language barriers.

Lessons learned

Bottom-Up push is required rather than Government mandates

African-context solutions are required to fast-track BIM adoption

Skill-gap and resource-gap are major bottlenecks to resolve

THANK YOU

BIM Africa

BUILDING INFORMATION MODELLING
AFRICA INITIATIVE

See you in Marrakech

BIM AFRICA SUMMIT 2023

Martin Lafleur

General Manager of the Quebec BIM Group, Canada

Martin Lafleur is a manager and **professional in strategic planning and economic development** with more than 20 years of experience, including 12 years designing, setting up and managing associations aimed at bringing together actors in the industrial field. With his consulting firm, **Lafleur Bellevue**, he accompanied Small and medium-sized enterprises (SME) and start-ups in their business development and search for financing. From 2006 till 2019, he acted as **Senior Director for Aéro Montréal**, **Quebec's aerospace cluster**. Having helped set up the organization, he led the main strategic and structuring files for the Quebec aerospace industry. Previously, he was a management consultant for 10 years as **Director of Manufacturing Practice at Innovitech**, an innovation management consulting firm. He was also a strategic planning senior advisor in the **pharmaceutical and medical equipment sector** for **Isogroup**, a firm specializing in life sciences. Mr. Lafleur holds an **MBA from Laval University**, Canada.

Fostering the Deployment of BIM through Collaboration

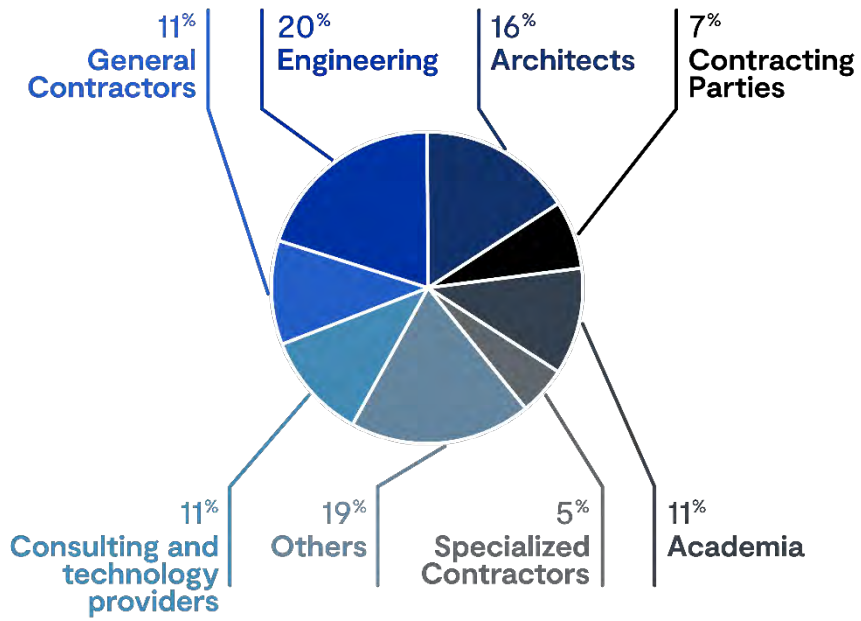
BIMe Initiative Excellence Seminar 2022

BIM Québec

POUR UN ENVIRONNEMENT BÂTI NUMÉRIQUE AU QUÉBEC

The Quebec BIM Group

- Established in 2009, a not for profit organization since 2011
- More than 300 members and 50 partners across Quebec
- Only community operating in Canada at the provincial level
- Proud affiliate of the buildingSMART Canada network



Challenges of the Quebec Construction Industry

Growth of the Industry

BUT

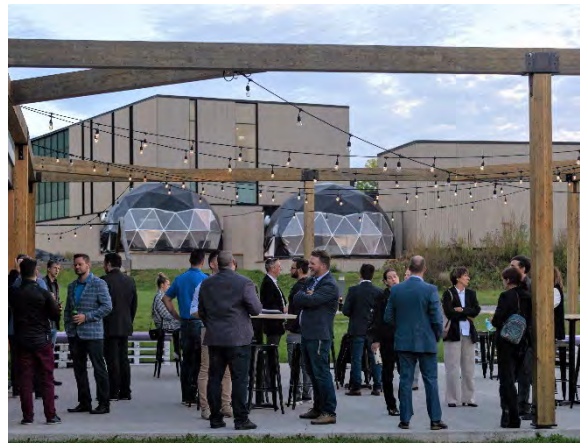
Deficit in Productivity

- Building Information Modeling is at the heart of the Digital Transformation of the construction industry
- The Digital Transformation of construction companies must supported by government and private industry stakeholders

The Quebec BIM Group

Community Building






The Quebec BIM Group

Industry Concertation and Strategic Consulting

The Quebec BIM Group

Design and Deployment of Public Programs

Digital diagnosis

Training and support

Digital locomotive

BIM at the National Level

buildingSMART Canada
BIM for municipalities
Canadian Annex to ISO 19650-2
Canadian LoX Specification, Part 1 – Introduction
Contract appendix revision
Building Transformations (CanBIM)
BIM/VDC Career Benchmarking
Digitization and Data Glossary
Digitization Maturity Survey
Standards Repository
What Are the Needs of a VDC Team?
Groupe BIM du Québec
BIM Dictionary localization for the province of Quebec
BIM training and education inventory*
Introduction to BIM for SMEs*
Product data templates*
Report on classifications and their use in Quebec*

Challenges

Challenge Areas for BIM Adoption and Implementation in Canada

Challenge area	Description
Lack of consistent demand by clients	Lack of client demand and lack of mandate for BIM consistently rank among the top barriers to BIM. This was echoed in the interviews with lack of consistent demand being a universal theme.
Lack of appropriate skills and competencies	Lack of in-house expertise, lack of knowledge and skills, lack of education and training, and lack of guidance have been identified as significant barriers for digital transformation and BIM adoption and implementation. Lack of technical, managerial, and operational know-how at all levels can seriously hinder the success of the transformation process and the realization of its benefits. The range and breadth of skills and competencies to be developed is considerable and requires a structured approach.
Incompatibility of capabilities and workflows across built asset value chains	Lack of collaboration and cooperation, inconsistency of workflows (BIM-based or hybrid), legal issues, inconsistent application, ad hoc standards, and interoperability issues (semantic, syntactic, process, and technical) hinder the full potential of BIM implementation.

CSA Group, Digital Transformation in the Canadian Built Asset Industry, Priorities for BIM Policy, Standardization, and Guidance, June 2022

Lessons Learned

Responses and Expected Outcomes to the Three BIM Challenges

Challenge area	Response	Outcome
Lack of consistent demand by clients	Create and systematize demand for BIM along with digitalized project delivery and built asset management.	Consistent and harmonized demand across Canada at all levels of government and across all sectors.
Lack of appropriate skills and competencies	Upskill industry stakeholders across industry segments, building on a core body of knowledge (BoK).	A skilled and competent workforce with the capacity to fully implement and benefit from BIM and digital transformation.
Incompatibility of capabilities and workflows across built asset supply and value chains	Structure practice and harmonize capabilities across supply and value chains through standardization.	Highly capable supply and value chains that benefit from increased opportunities for integration of processes, workflows, and information flows.

CSA Group, Digital Transformation in the Canadian Built Asset Industry, Priorities for BIM Policy, Standardization, and Guidance June 2022

Fostering the Deployment of BIM through Collaboration

BIMe Initiative Excellence Seminar 2022

BIM Québec

POUR UN ENVIRONNEMENT BÂTI NUMÉRIQUE AU QUÉBEC

Dr Sanphawat Jatupatwarangkul

Head of Standards at Thai BIM Association and Asia BIM Collaboration Group Committee, Thailand

Dr Sanphawat leads **Aurecon Thailand**'s digital transformation through the development and delivery of future digital strategy and implementation. With over 17 years of Architecture, Engineering and Construction (AEC) professional practice experience, Dr Sanphawat is a strategic digital and BIM adviser on commercial and residential projects within Thailand and the region. He assisted many organisations in utilising digital innovation and the **BIM Organisation Standard** to drive business value. Dr Sanphawat contributes to the AEC industry in Thailand. In his capacity as the **co-founder** of **BIM Club Thailand** and **executive committee member** of the **Thai BIM Association**, he shares his knowledge about the Visual Design and Construction (VDC) - BIM process through talks and webinars for the wider community. He has a passion for designing intelligent buildings and smart cities, developing energy-efficient solutions to ensure optimal building performance, sustainable development, asset management and digital transformation.

Dr. Sanphawat is the TBIM's executive committee and head of the standard who has an expert on Thailand's digital transformation through developing and delivering future-ready digital strategy and implementation. Sanphawat has built a reputation as a trusted commercial and strategic digital and BIM adviser on a wide range of various projects and corporations in the AEC industries for over 15 years.

SPECIALIZATION

- Digital Management
- Corporate BIM Assessment in AEC
- Corporate BIM Implementation and BIM Handbook - Standard
- BIM Strategic and Management Consulting
- Visual Design and Construction
- BIM uses implementation: (Design-Construction collaboration, Clash detection. Cost Control, Cost-Code, Sustainable investigation, Project tracing king, Facility Management)
- Innovation Research and Development
- Digital Facility – Asset Management
- Digital Twin and Smart City

Professional

AAU

MONTFORT del ROSARIO SCHOOL OF ARCHITECTURE and DESIGN

Faculty Member

CRDIS

Center of Research and Design Innovation Service (CRDIS)
Head of Research Promotion and Dissemination

aurecon

Digital Practice Leader (Thailand)

Community Contribution

TBIM

Executive Committee and Head of Standard

BIM CLUB THAILAND

Co-founder

about TBIM

BIM USERS COMMUNITY

Investor, Developer, Designer, PM, CM, Contractor, Supplier, Consult, Academic,

“INCLUSIVE”

PROMOTE BIM TECHNOLOGY FOR BETTER QUALITY OF THAILAND BUILT ENVIRONMENT

SUPPORT NATIONAL COMPETITIVENESS, PROMOTE BUILT ENVIRONMENT DATA SHARING, DEVELOP BUILT ENVIRONMENT RELIABLE REFERENCE SOURCE

TBIM
สภาอุตสาหกรรมแห่งประเทศไทย
The Federation of Thai Industries
SCG
ANANDA DEVELOPMENT
AP
TPIPL
49 GROUP
ธนายง
ATOM
aurecon
AUTODESK. Make anything.
BIM CLUB THAILAND
BIMINONE
DEC
DTGO
GRAPHISOFT
Hook Architects Company Limited
INNOPLAN
IDEA INNOVATIVE DESIGN & ARCHITECTURE
JAI GROUP
JEC
KOR-IT
PRE-BUILT
ฤทธา RITTA
TEAM•OM
บริษัท พรพรนนคร จำกัด PORNPRANAKORN CO.,LTD.
THS
TEKA
THAI OBAYASHI
VISAVAPAT
WESTCON GENERAL CONTRACTOR
AUTODESK. Make anything.
GRAPHISOFT A NEMETSCHEK COMPANY
Tekla

BIMe INITIATIVE

"15 steering committees, and 10 sub-committees, and including 20 partnerships with current over 600 members from AEC ecosystem"

BIM Market Growth in Thailand

BIMe INITIATIVE

Skill VS Demand

Synergy Model

TOR and LOD Maturity

ROI Target

OPEN BIM

Asia – ASEAN Economic Community Collaboration

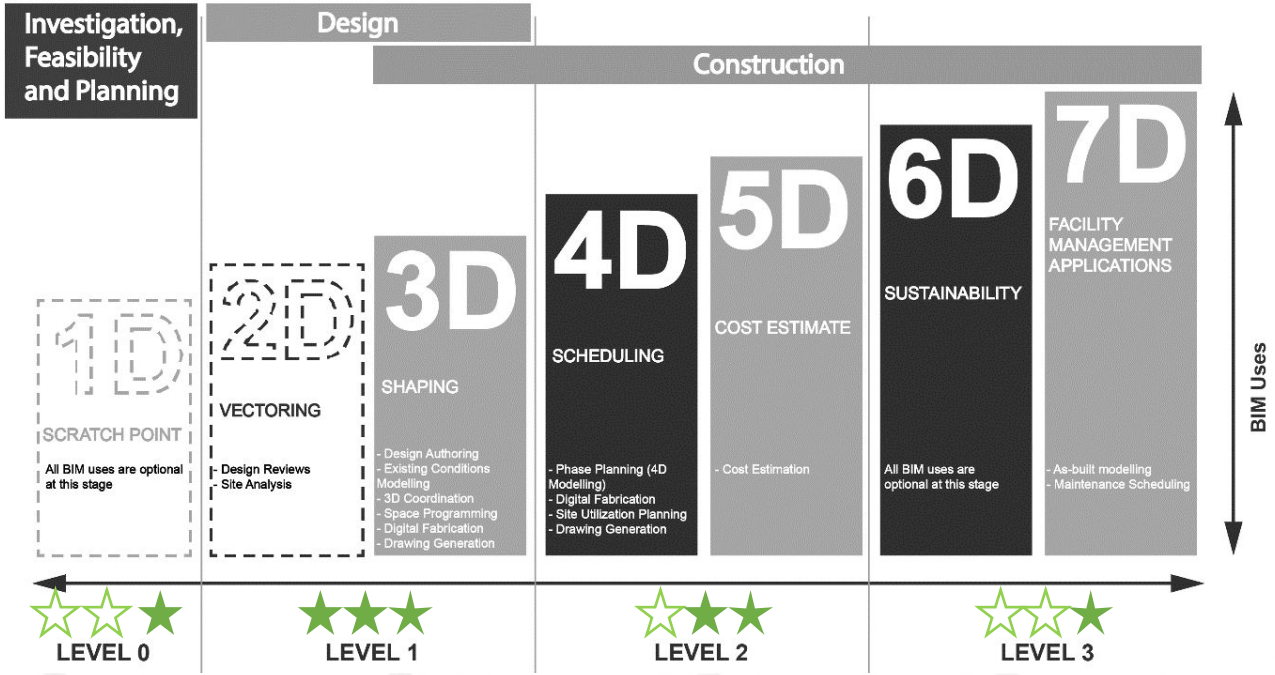
2022

Thailand's BIM Challenge

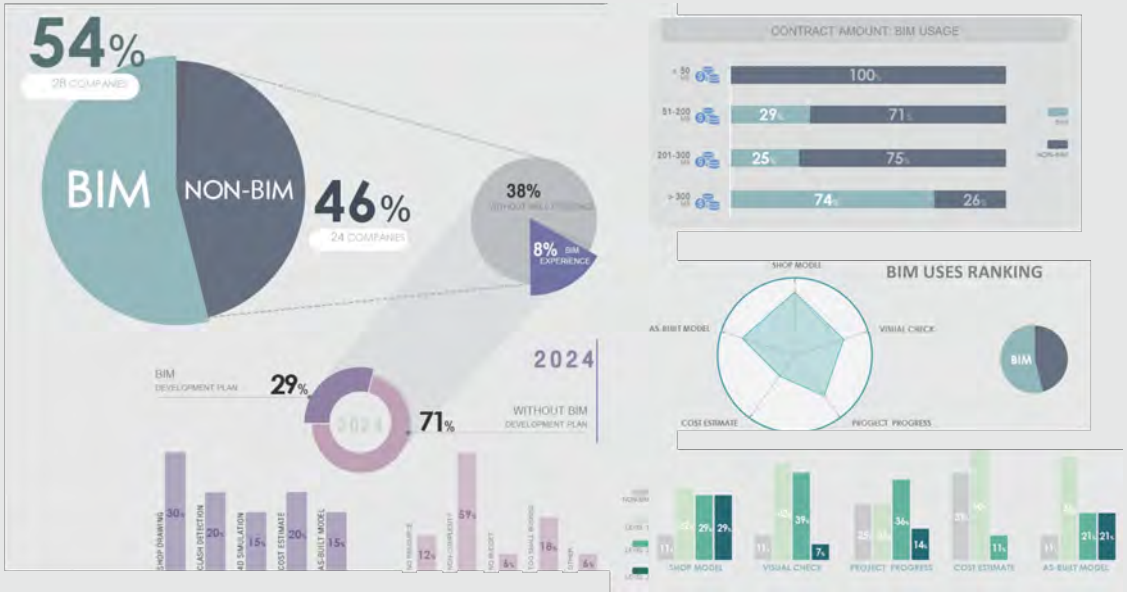
BIM Users' Maturity Assessment

OWNER	PM/CM	QS	DESIGNER	CONTRACTOR	VENDORS	SUPPLIER	OPERATOR
Demanding and wllling to invest	*Requires to upskill*	*Lack of Skill development*	*Norm for medium to large firms*	*Increasing skill for main contractor*	*Lack of Skill development*	*Increasing skill and model*	*Lack of Skill development and tangible benefit of digital twin*

BIM Uses Experiences and Targets



การสำรวจสมาคมอุตสาหกรรมก่อสร้างไทยในพระบรมราชูปถัมภ์
(Thai Contractors Association under H.M. The King's Patronage)



BIM Maturity *Thailand 2022*

2022 Excellence Seminar 15 & 16 November

BIMexcellence.org

Conclusions and Suggestions

01 Will use BIM, If TOR is required

TOR is the main factor to choose whether using/not using BIM due to its determine in contract and deliverable

02 Willing to use BIM after experiencing it

Even though, the contractors were driven by TOR but the benefits of BIM were discovered later, leads to continuous improvement for making the most of valuable

03 BIM for Shop Modeling leads to convenience and connectivity

Shop Model is the most BIM usage in construction industry because of BIM accelerate and accurate construction process

04 Complexity leads to BIM Use

The larger project size reflects the complexity construction and its generally offer to use BIM

05 The Larger the size, The more BIM is utilization

The rate of using/not using BIM is directly related to the number of employee and the capability of a single project. With a larger company, there is more potential and more different area to use BIM.

06 Easier billing with 4D Project Scheduling

Contractors were use BIM for planning and report project progress to improve communication with an owner

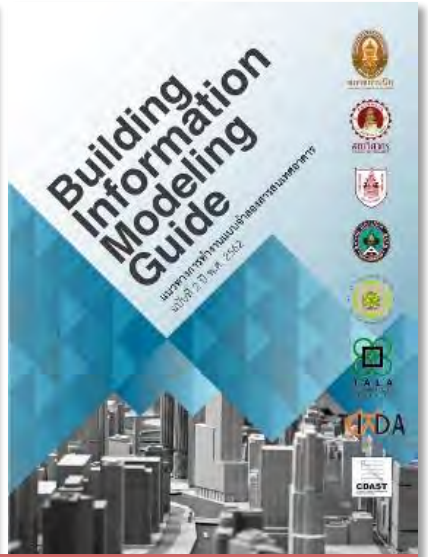
07 BIM standard is needed

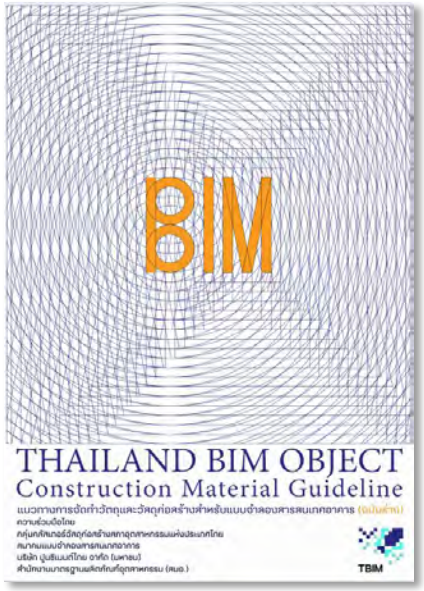
Regarding to contractors obstacle are no standard to regulate BIM project, there are need minimum requirement to delivery BIM project

08 Monopoly of BIM Software

The most of BEP define a monopoly software, resulting in high costs of BIM software licenses. So, BIM standard should be free to use software that was appropriate for their company

BIMe INITIATIVE





BIM Synergy in Thailand

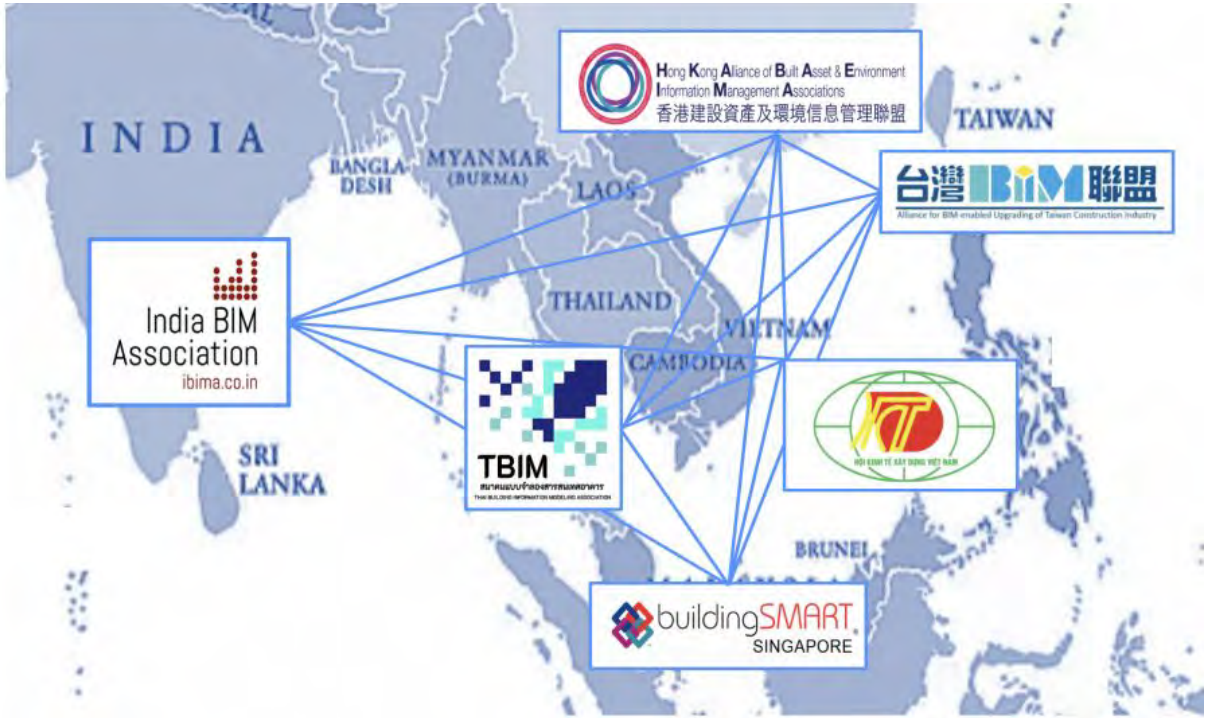
2022 Excellence Seminar 15 & 16 November

BIMexcellence.org

Asia Future Possibility

ABC GROUP (Asia BIM Collaboration Group) is to

1. Coordinate, collaborate and exchange information for the purposes of mutual benefit, and the growth and development of the digital ecosystem in Asia.
2. Enhance the competencies in Digital Delivery Transformation within the Building and Infrastructure Industry.



"Enhancing Digital Delivery Transformation within the Built Environment in Asian countries, via Collaboration and Information Exchange for the Purpose of Mutual Benefit, and Promoting Growth and Development of the Digital Ecosystem."

ABC's manifesto

ABC GROUP "KEY COMPONENTS OF DIGITAL TRANSFORMATION"

SKILL SETS

Enhancement of competencies and skill sets in the various stages of project cycle. Develop accreditation schemes.

STANDARD OPERATIONS PROCESSES

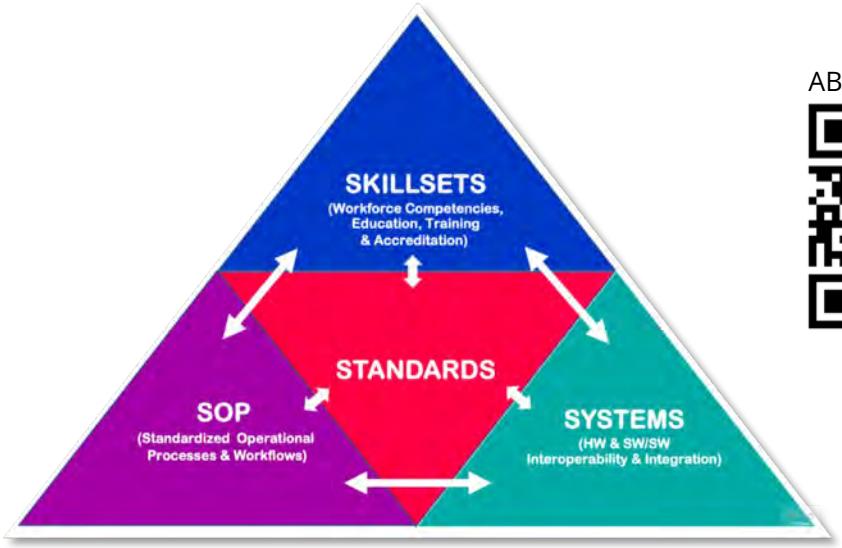
Promote best practices and work processes in the project cycle.

SYSTEMS

Promote integration of hardware and software with solutions and tools to promote interoperability in various stages of the project cycle

STANDARDS

Promote standards to enhance management of information and productivity in digital delivery projects



ABC GROUP INFO.

Session 2

Macro Adoption Study - Phase III launch

In this session, the Macro Adoption team (Project E) will share what they've been developing over the past 2 years and will announce a major expansion of their data collection effort

BIMe INITIATIVE

The Macro Adoption Project aims to:

Assist policymakers in developing
and/or assessing the macro BIM diffusion
policies, strategies and plans
within their respective markets.

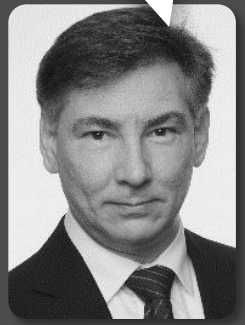
Macro Adoption Team

BIMe INITIATIVE

Bilal

Mohamad

Eduardo

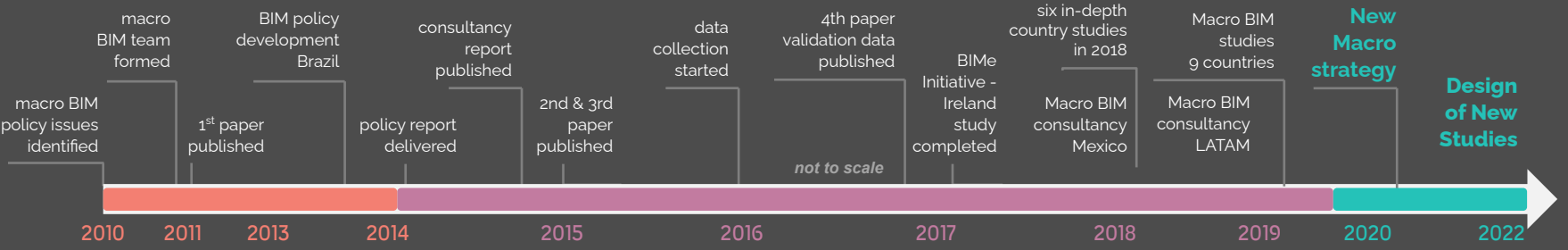


Danny

Cristiane

Macro Adoption Project

BIMe INITIATIVE



Phase I

Phase II

Phase III

BIMe INITIATIVE

We have finished the preparatory works and now we are ready to

Launch Phase III !

The Phase III aims to:

BIMe INITIATIVE

Structurally extend the **Macro Adoption Project** and position it more clearly as the leading worldwide research effort for country-scale BIM adoption, policy development, and digital transformation across Built Environment sectors and disciplines.

The Phase III Complementary Studies

BIMe INITIATIVE

1 Policy Environment

To establish **whether**, **when**, and **how policies** are being enacted **by Policy Makers** to facilitate BIM adoption and digital transformation

2 Education Landscape

To establish the **diffusion** of **digital transformation** topics across **Educational institutions** and programmes

3 Organisational Adoption

To establish the **adoption** of **digital transformation** tools, workflows, and protocols **within organisations**

Work done to date

BIMe INITIATIVE

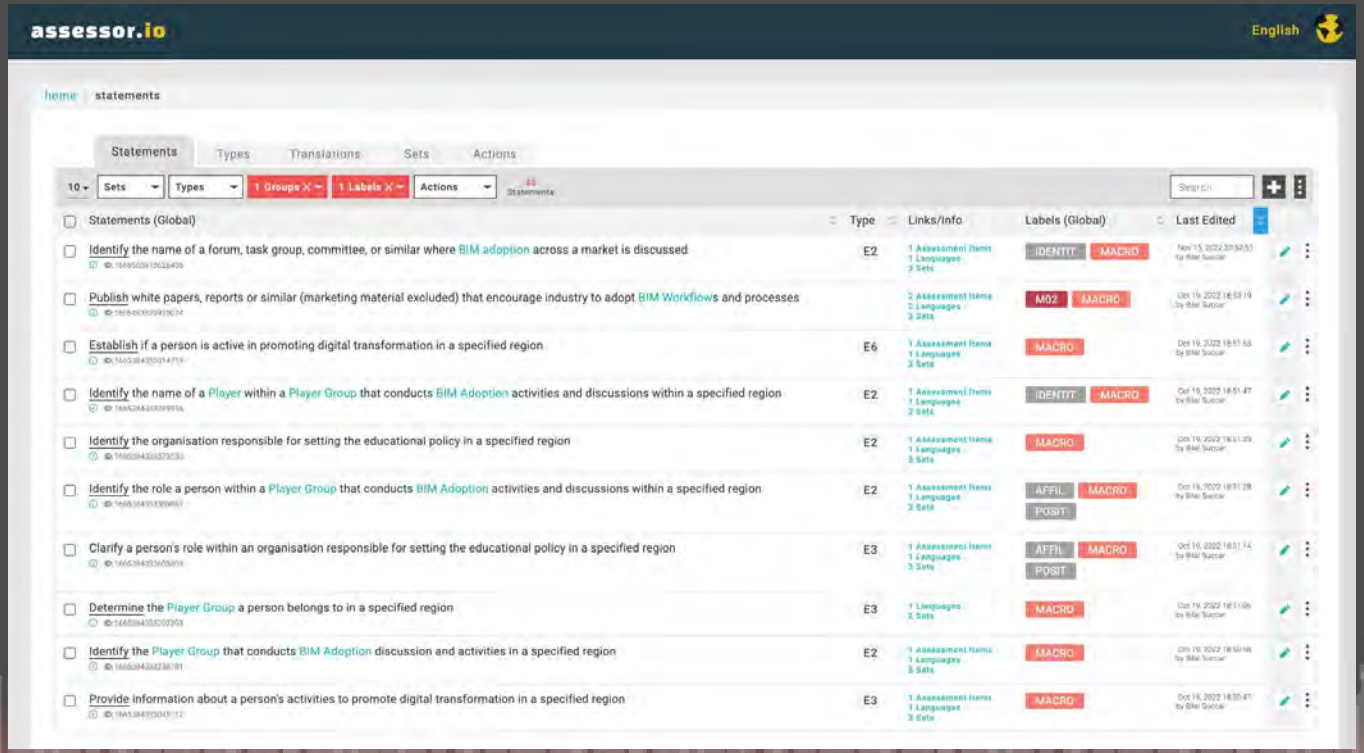
- Survey design
- Study protocols
- Assessment tool development
- Study coordinators profile
- Collaboration agreement
- Macro Adoption project website

Work done to date - new website

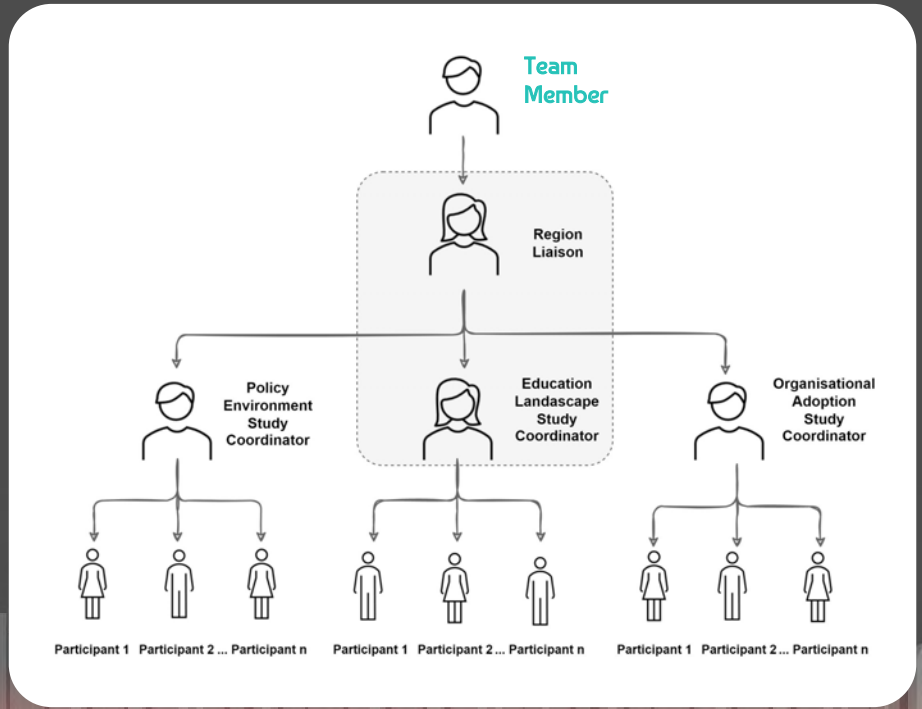
https://macroadoption.com/

Work done to date - Key Adoption Indicators

BIMe INITIATIVE



Study Coordinators - recruiting



Policy Environment [PE]

Education Landscape [EL]

Organisational Adoption [OA]

Study Coordinators - recruiting

BIMe INITIATIVE

Key responsibilities

- Receive training for the study
- Vet and invite participants
- Collect data
- Ensure data reliability
- Analyse data
- Publish results

Key attributes

- Individuals representing a public organisation, a university, or not-for-profit association or community group
- Actively promoting digital transformation

Looking for Study Coordinators

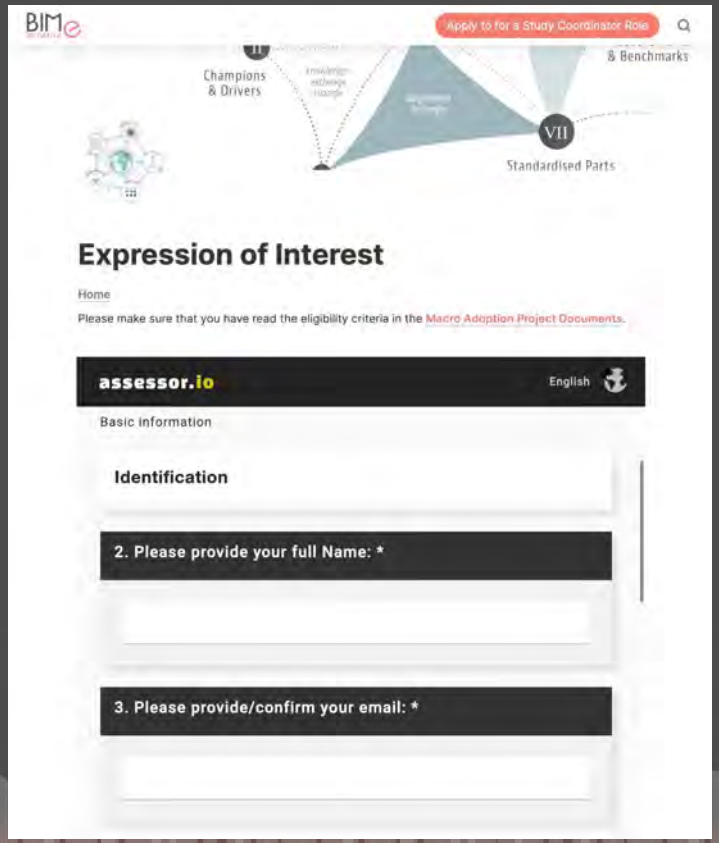
BIMe INITIATIVE

Study protocol

Study coordinator profile

Collaboration agreement template

Submit Expression of interest



https://macroadoption.com

macro@bimexcellence.org

Break Time!

streaming resumes in 8 minutes

Session 3

Cloud-based data and information management on whole asset lifecycle with NovaBIM

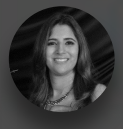
A presentation by a BIMe Initiative Supporter


BIM e
INITIATIVE
SCREEN SHARING TIME!

Session 4

Model Use Templates – Project Update

In this session, the Model Use Templates team (Project F2) will provide an overview of the efforts conducted over the past two years and introduce new materials of conceptual and practical benefits



BIMe INITIATIVE

Model Use

Project F2

MUT 4040 Team

Regina
/reginaruschel

Fernanda
/fernandamachadoarq

Lorena
/lorenamoreira-ufba

Paula
/paulapmota

Timeline F2

2018
Call to Action

2018
MUT Template

2019
MU 4040

2021
Project Strategy

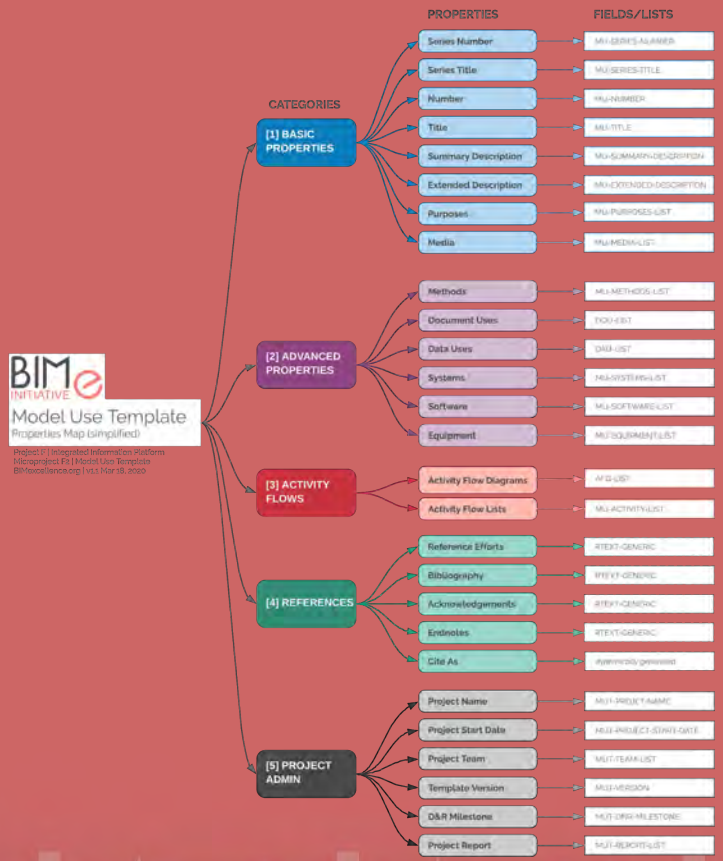
2022
MU 3020

Context

4. Valued comprehension
3. BIM Dictionary
2. Complex process
1. MU at the heart

Model Use Templates

are intended to assist practitioners in identifying the activity flows, competencies, and resources needed to execute a Model Use



BIM INITIATIVE

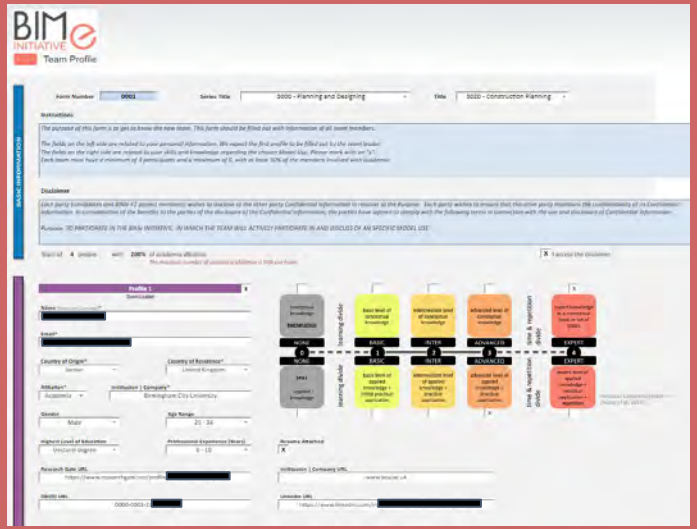
The Template describes a Model Use with information structured by

Categories

Properties

Fields

Recruitment process

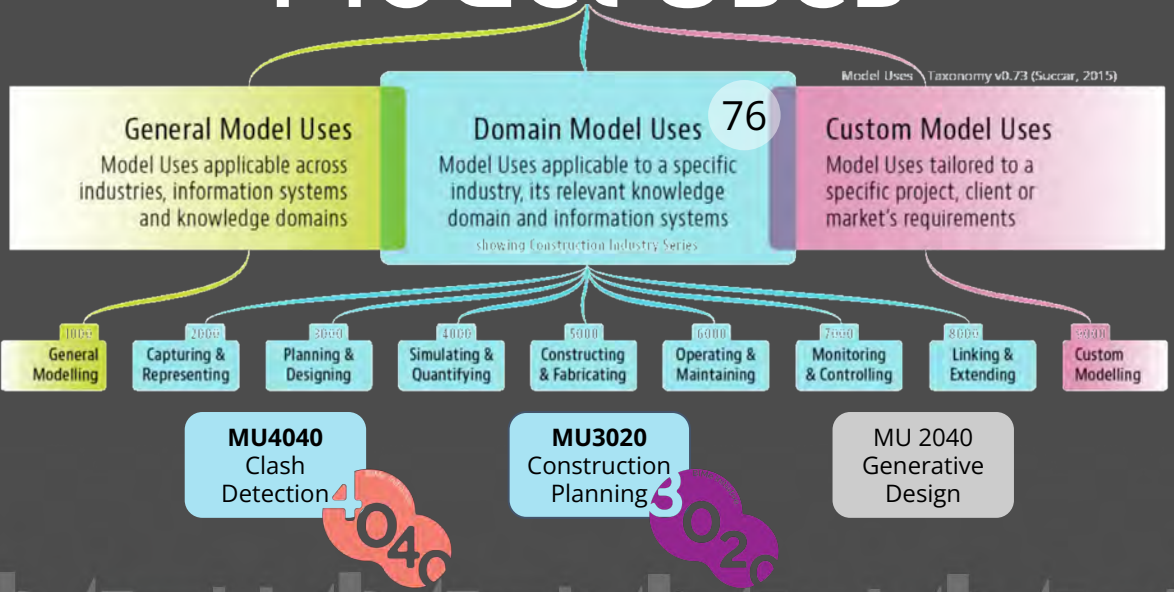


Individual Competency Index v1.2 (Succar, 2013)

Team profile analysis based on conceptual and applied knowledge

BIMe INITIATIVE

Model Uses



BIMe INITIATIVE

MUT 3020

Construction Planning

MUT 3020 Team

Mohammad
/dr-mohammad-mayouf-phd-fhea-mciob-chgr-02548430/

Mahya
/mahya-nazari-9b503158/

Angela
/angelahugosilva/

Claudia
/claudia-t-3710b2119/

Basic Properties

MU-Series-Name: Planning and Designing

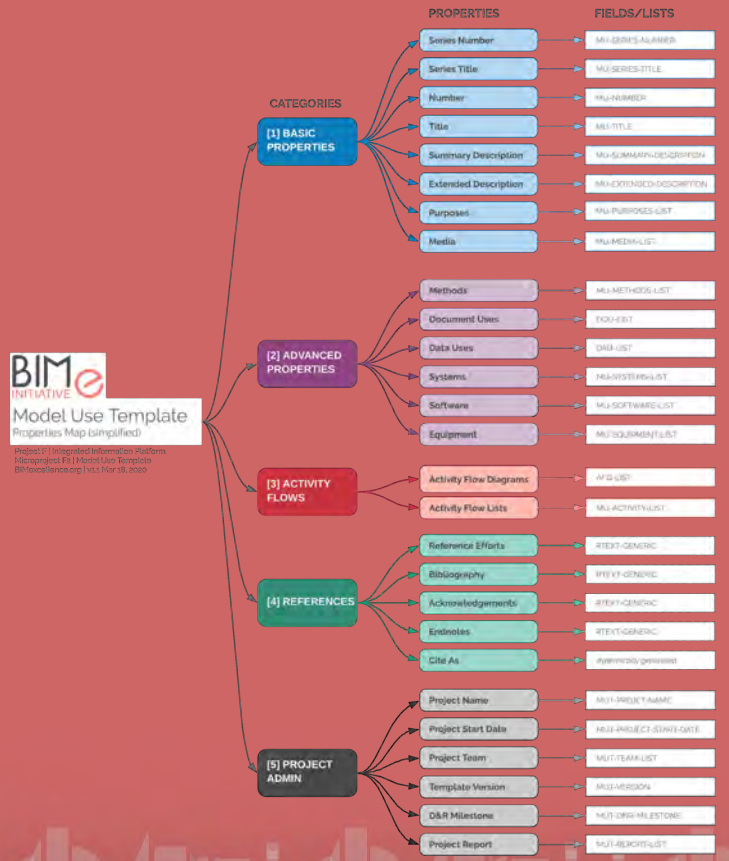
MU-Series-Number: 3000

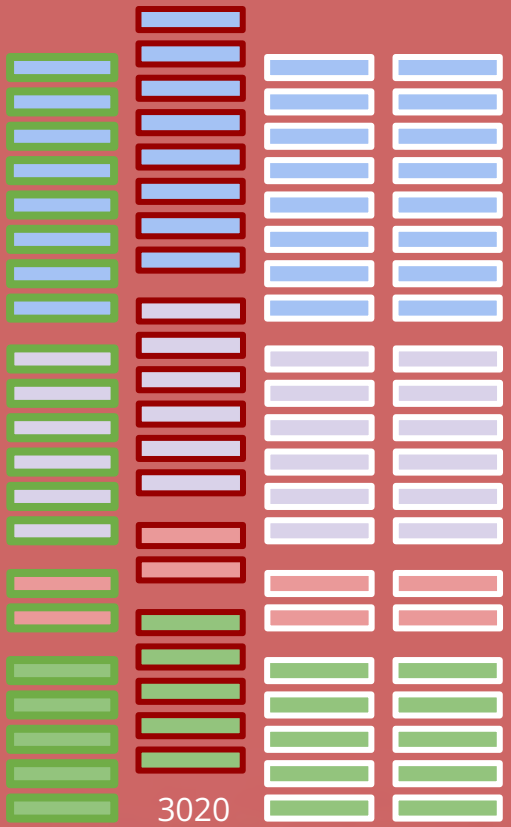
MU-Number:3020

MU-Title: Construction Planning

Version: Ago 02 2019

Description: A Model Use where the BIModel is used to plan, organise or test construction activities against constraints (e.g. time, human resources and materials).





4150 4180 4165

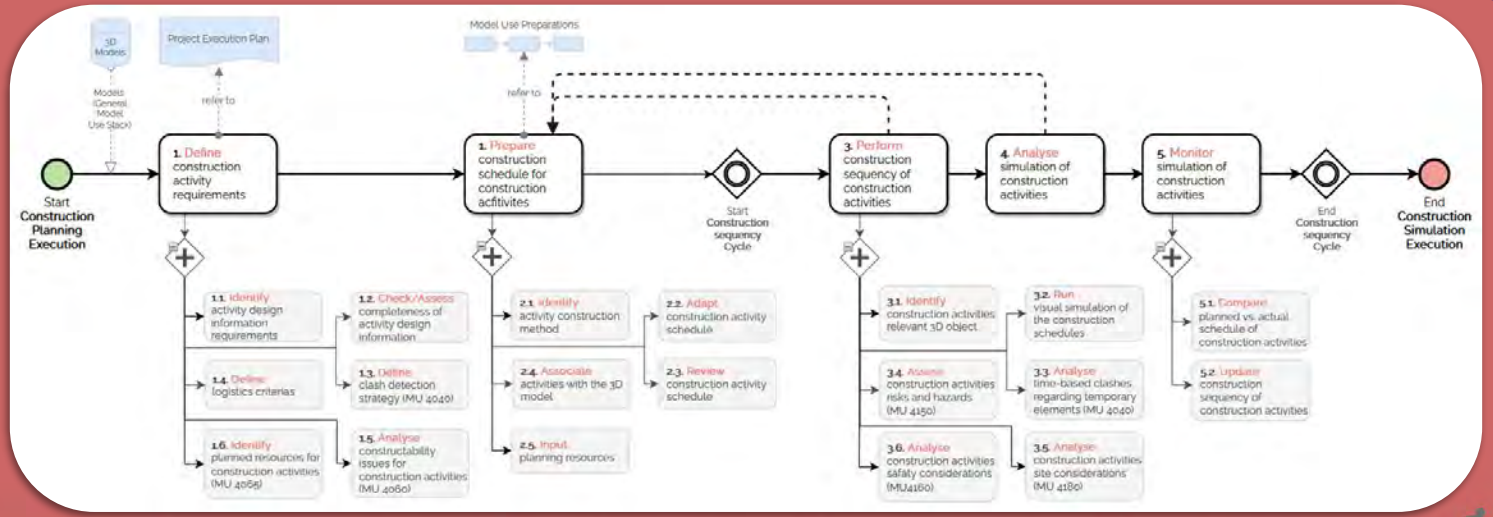
BIMe INITIATIVE

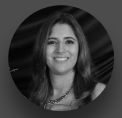
Knowledge Sharing

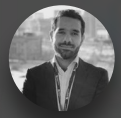
Code Checking
Construction Operation
Analysis
Risk and Hazard Analysis
Site Analysis
Safety Analysis

BIMe INITIATIVE

Activity Flow







BIMe INITIATIVE

Thank you!

Day 1 summary

Thank You

see you tomorrow for
Day 2 at **12:00** UTC

share your thoughts on social media

#ExcellenceSeminar

2022 Excellence Seminar

supported by

NOVA BIM

Excellence Seminar

Day 2 is hosted by

Arghavan Akbarieh

Doctoral Researcher , University of Luxembourg

Day 1 RECAP

Session 1 Digital Transformation Efforts
Session 2 Macro Adoption Study - Phase III launch

Session 3 Supporter Session - NovaBIM
Session 4 Model Use Templates – Project Update

Discussions & Summary

Day 2 Welcome

Session 5 BIM Dictionary Community
Session 6 New BIM Dictionary Platform

Short Break

Session 7 Supporting the BIMe Initiative
Session 8 ISO 19650 - Vulgarisation App
Session 9 Calls to Action + Future Plans

Day 2 Summary

send questions after the session through the **Contact US** page

materials will be available Dec 15 on **Seminar's** page

recordings will be available on the **BIMei Channel**

share your thoughts on social media

#ExcellenceSeminar

Session 5

BIM Dictionary Community

In this session, the BIM Dictionary team (Project A) will introduce a number of Editors and Reviewers who will share how and why they contributed to this knowledge-sharing effort

Dr Marzia Bolpagni

Head of BIM International - Associate Director at Mace

Marzia works on digital construction at **Mace** where she develops and implements digital construction solutions for international clients. She holds a PhD in **Smart Construction**, and she is passionate in filling the gap between industry and academia.

She is Assistant Editor of the **BIM Dictionary**, Ambassador of **Nima** and Expert at the **European Committee for Standardisation** (CEN) **TC 442** and **International Standardization Organisation** where she chairs a Task Group on information requirements standardisation (Level of Information Need). She is lead author of the Level of Information Need standard **EN 17412-1**, Chair of **EC3 Modelling and Standards Committee** , Honorary Lecturer at **UCL** and Visiting Professor at **Northumbria University**. She is also founder of **Italians in Digital Transformation Uk**.

Orjola Braholli

Architect | BIM specialist | Researcher at Fraunhofer Italia

Orjola is an architect, BIM specialist and researcher in the field of digitalisation in construction. Currently working as a scientific researcher at **Fraunhofer Italia** with the team of Process Engineering in construction.

Passionate about integrating BIM methods with sustainable design and contribute to the industry through her work with applied research.
She Community Coordinator of the **BIM Dictionary** since 2020.

BIM INITIATIVE

BIM Dictionary
common language, shared goals

What is the BIM Dictionary?

BIMe INITIATIVE

an international community effort

a research-based and reliable resource

uses a simple language to aid understanding

includes hundreds of interconnected terms

is continuously reviewed and improved

an open access platform to freely use

How many terms?

To search, learn and
share in many languages

Terms

810

Translation

Translation of terms in 27 Languages

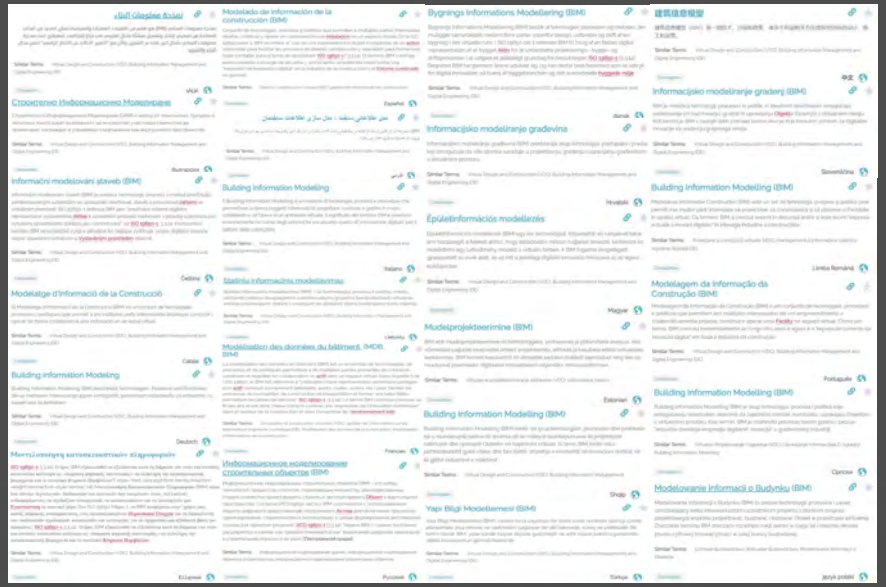
Example. "BIM"

Building Information Modelling (BIM)

Building Information Modelling (BIM) is a set of technologies, processes and policies enabling multiple stakeholders to collaboratively design, construct and operate a Facility in virtual space. In ISO 19650 part 1, BIM refers to the "use of a shared digital representation of a built Asset to facilitate design, construction and operation processes to form a reliable basis for decisions" ISO 19650-1 (3.3.14). The term BIM continues to evolve over the years and is thus best understood as an 'expression of digital innovation' across the construction industry and the overall Built Environment

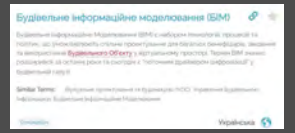
Similar Terms: Virtual Design and Construction (VDC), Building Information Management and Digital Engineering (DE)

Conception English



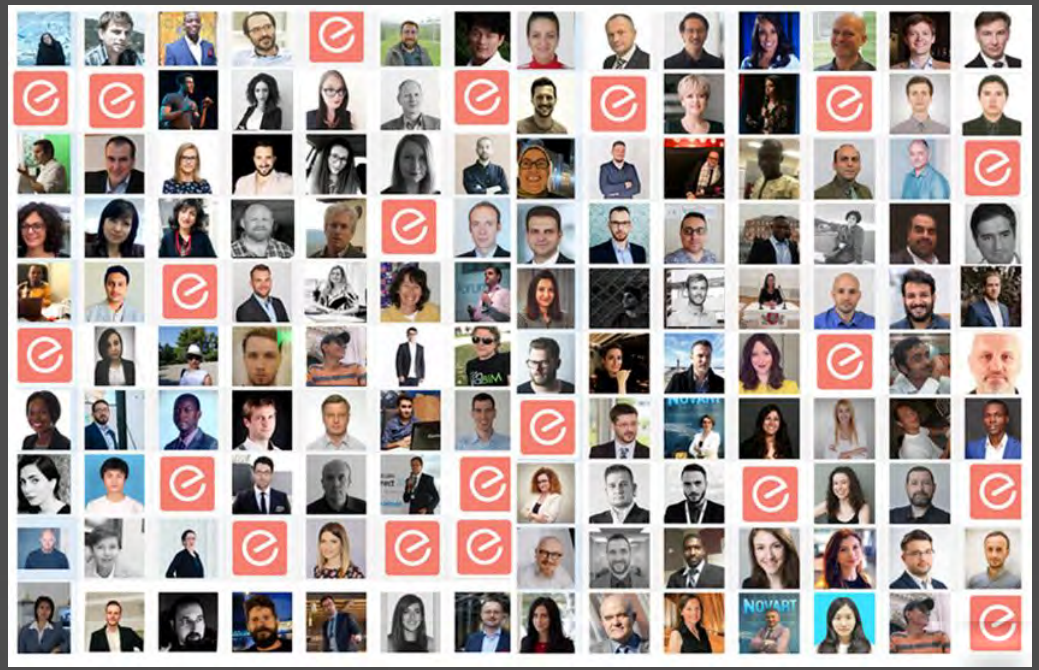
BIMe INITIATIVE

4 new languages



Macedonian

The Volunteers

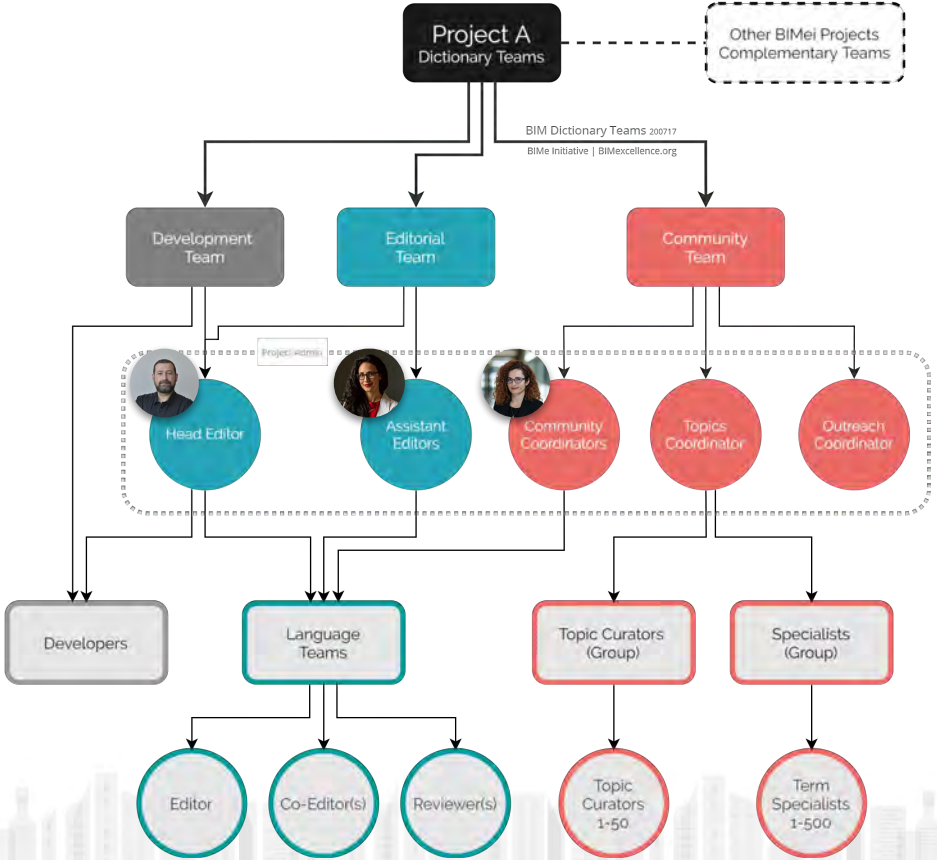


140+

Community Coordinator

Assistant Editor

Head Editor



The BIM Dictionary Worldwide

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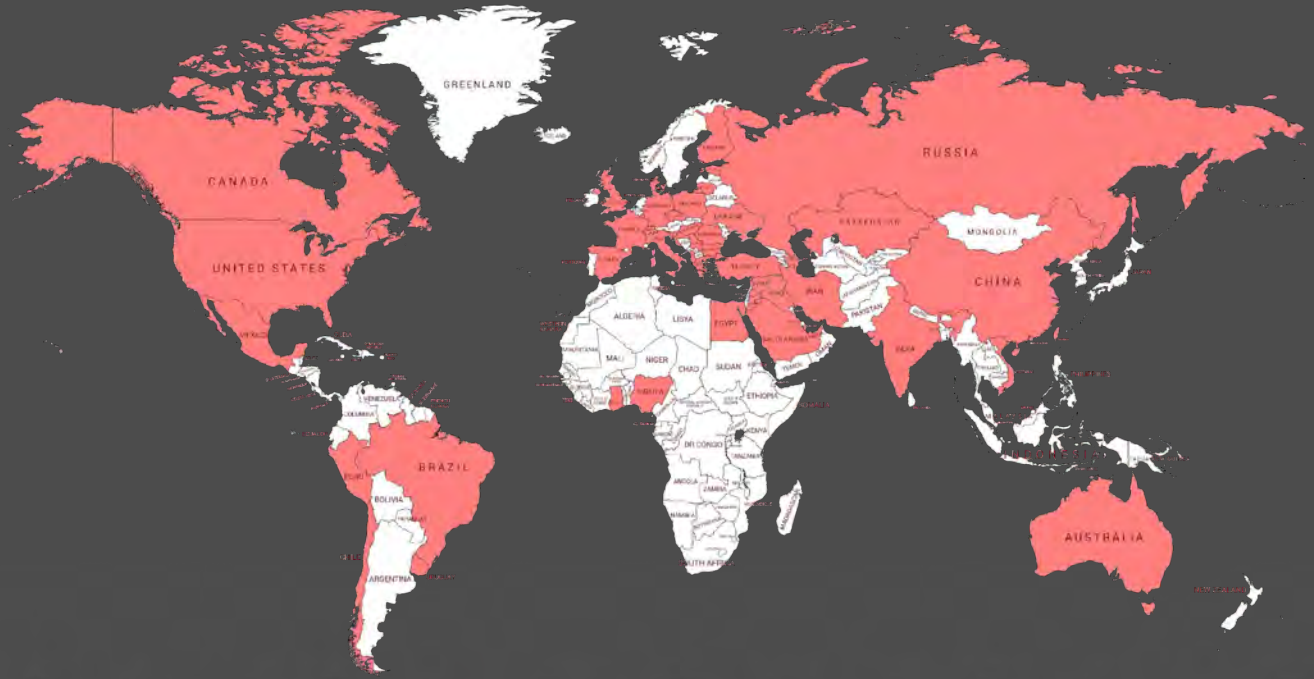
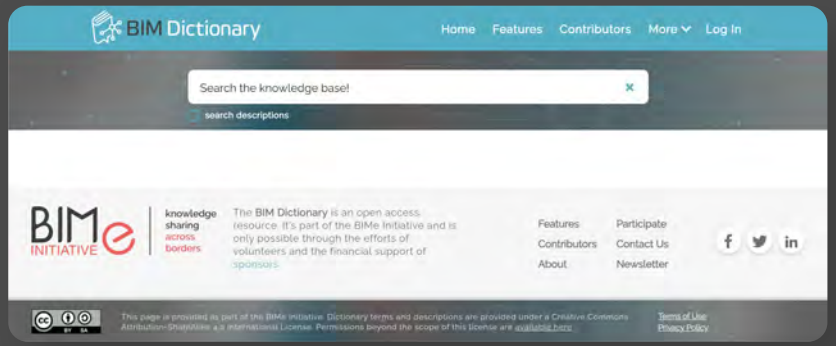
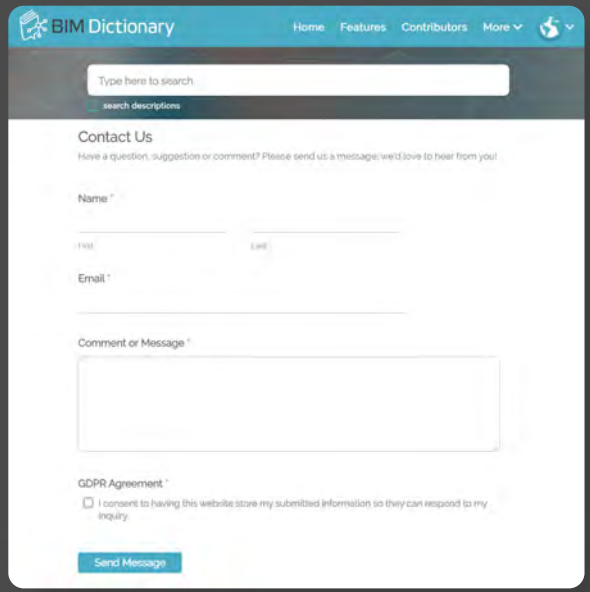


Contact Us!





https://bimdictionary.com/contact

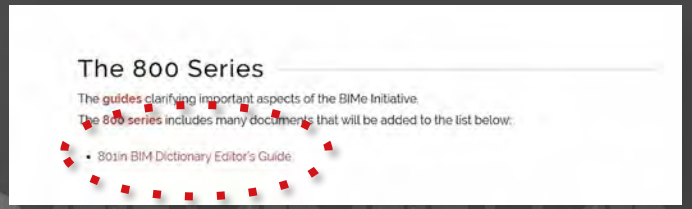
OPEN Positions!

We are looking for volunteers to join the:

- German Team
- More Languages Editors & Co-Editors!

https://bimdictionary.com/contact

Material available



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Language Team

Damir Mance
Croatian
Language Team

Jiayi Yan (Joy)
Chinese
Language Team

Stepanka Tomanova
Czech
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Kerem Ilhami
ISO terms
Topic Curator

Andrijana Nasteska

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Danish Language Team

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Reviewer, 2020 - 2021

kea

Jan Fuglsig Lambrecht
Co-Editor, 2020 - 2022

BIMe INITIATIVE

A big 'THANKS' for your contribution, thorough reviews and most of all sharing knowledge

Progress

- 220 Published terms
- Ongoing translations and reviews for a batch of 590 terms
- Efforts to implement the BIM Dictionary within the BIM Community in Denmark

Teamwork

BIMe INITIATIVE

- Combined knowledge from consulting, contractor and a clients point of view
- We research constantly for translations that are already published in Denmark, and use them in our translations
- Our roles are flexible

Motivation

- Translating the BIM Dictionary is our hobby
- We have understanding for any challenges we might face individually, and support each other
- We have planned our first come-together as we all come from different corners of Denmark
- Our greatest motivation: we strongly believe that BIM Dictionary will result in better collaboration within the building industry in Denmark

BIMe INITIATIVE

Damir Mance

Croatian Language Team

Reviewer
Editor
Co-Editor

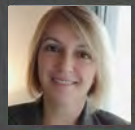



Hrvoje Jukić
Karlo Seitz
Marin Stojanović

Damir Mance

Monika Mlakić



Maja Marija Nahod
Ada Podrug

Zlata Dolaček-Alduk
Dina Stober

jul
2016
2017
2018
2019
2020
2021
2022
2023

Tea Helman Jukić


Mladen Vukomanović
Sonja Kolarić

buildingSMART Croatia

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Croatian Language Team

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Editor
Co-Editor




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Karlo Seitz
Marin Stojanović

Damir Mance

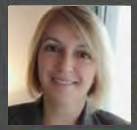
Sveučilište Josipa Jurja Strossmayera u Osijeku
GRAĐEVINSKI I ARHITEKTONSKI FAKULTET OSIJEK

Centar za digitalnu izgradnju Hrvatska

digital construction technologies

Monika Mlakić



Maja Marija Nahod
Ada Podrug

Zlata Dolaček-Alduk
Dina Stober

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Croatian Language Team

jul 2016
jul 2017
jul 2018
jul 2019
jul 2020
jul 2021
jul 2022
jul 2023

Tea Helman Jukić

arhitektonski studio Helman & Jukić

IPMA HRVATSKA international project management association


Mladen Vukomanović
Sonja Kolarić

buildingSMART Croatia

buildingSMART Croatia

Af Sveučilište u Zagrebu Arhitektonski fakultet University of Zagreb Faculty of Architecture

SVEUČILIŠTE U ZAGREBU GRAĐEVINSKI FAKULTET UNIVERSITY OF ZAGREB FACULTY OF CIVIL ENGINEERING

HZN Hrvatski zavod za norme Croatian Standards Institute

Croatian Language Team

Complexities

- Extensive database of terms/neologisms
- Multiple versions of existing translations
- No coherence between official institutions
- Language differences
- Small community

Croatian Language Team

How to deal with complexities?

- Enthusiasm and passion
- Micro-volunteering
- Engagement in work groups in various institutions
- Support from public stakeholders

Croatian Language Team

TRANSLATIONS

215 terms translated > review in process

New BIM Dictionary platform

more intuitive process > increased productivity

Goal: complete translations by the end of …

Jiayi Yan (Joy)

Chinese Language Team

Dr Qiuchen Lu

Associate Professor
UCL, The Bartlett School of Sustainable Construction

Dr Long Chen

Lecturer
Loughborough University, School of Architecture, Building and Civil Engineering

Dr Shanjing Zhou

Research Postgraduate
Imperial College London, Department of Civil and Environmental Engineering

Ms Jiayi Yan

PhD Candidate
UCL, The Bartlett School of Sustainable Construction
Co-founder of ZhiuTech in China
Previous BIM consultant in the US

Progress

- 932 published terms in total
- 101 terms under translations/reviews
- Scheduled completion by the end of 2022

Experiences

- Understand the term from both the industry and academic sides
- Make it an iterative process
- Be patient

Significance

- Benefit both the academic and practical communities
- Quick way to learn BIM comprehensively
- A preparation for further stages of digitalisation in China (e.g., BIM-based O&M, digital twin)

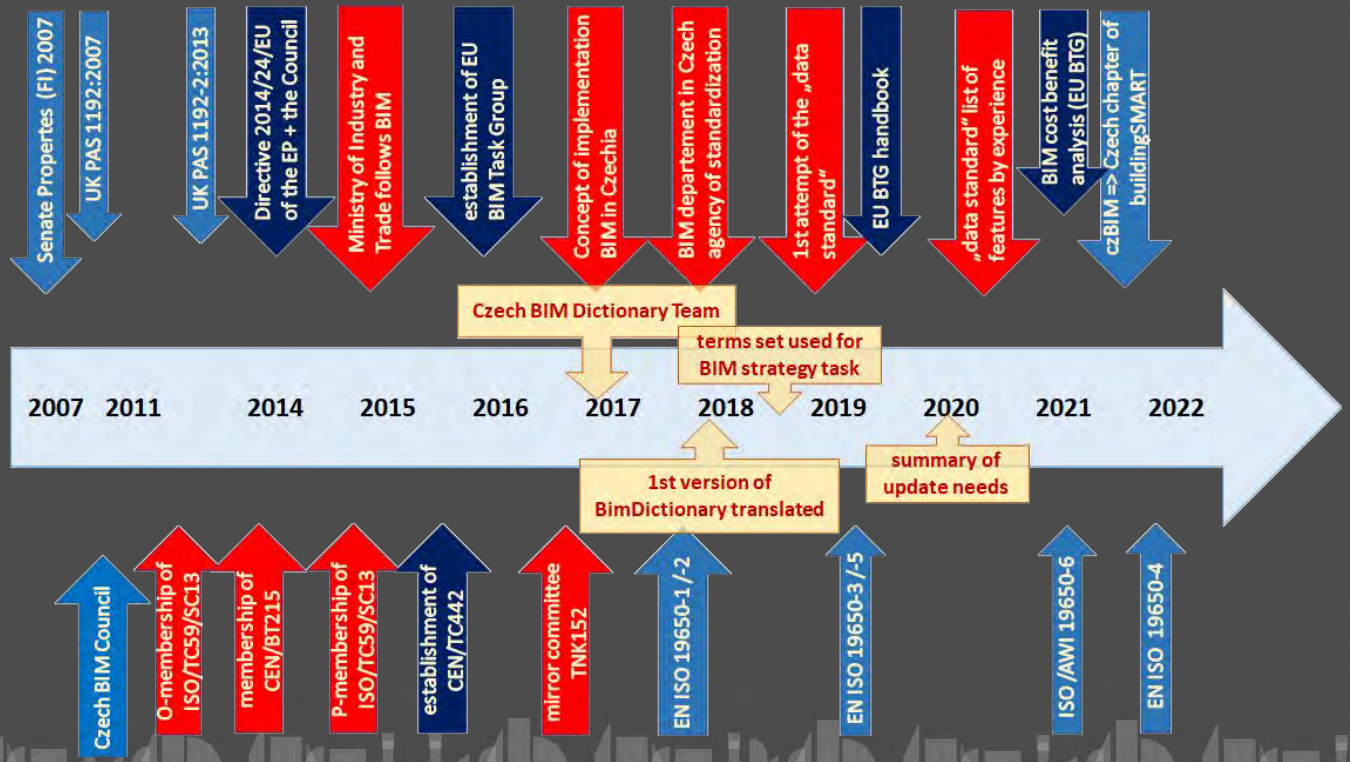
Future works

- Promote BIM dictionary within the communities
- Keep the dictionary dynamic

Stepanka Tomanova

Czech Language Team

History and background



Used sources of the terminology

BIM Dictionary
thematic terminology

TermIt
thematic terminology
(classification CCI a CZ-CC, chosen laws/acts, methodologies for BIM)

Tezaurus
thematic terminology
(geoinformatics, eGovernment)

Terminology database
„Product regulation“
(terminology from technical standards)

ISO Online Browsing Platform
(ISO technical standards terminology)

Lessons learned

- first translations was fast – enthusiastic team ⇒ *involved volunteers*;
- members were from universities, standardisation agency and commercial companies ⇒ *team as wide as possible*;
- small permanent team needed – following the development and strategy specification ⇒ *the work is not finished with any date*;
- synchronisation with technical standard development, including the translations ⇒ *align with the latest news on the local market*;
- introducing the project to local rule/policy makers ⇒ *respect of the content and its use, official support and partly initial funds*.

Zuhair Nasar

Arabic Language Team

Arabic Team

Jan 2017 to Feb 2021
Editor
Omar Selim

March 2021 to Present
Editor
Zuhair Nasar

Arabic Language Team

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Co-Editors:

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Ahmad Lutfi	Syria	Tornado Group, UAE
Billel Dridi	Algeria	BIM Manager/Digital Transformation Lead
Dr Manal M. AlAdwani	Kuwait	Founder & CEO of BIM MENA
Dr Hayam Omayer	Egypt	Associate Prof, Cairo higher institute for engineering
Dr. Djamel Dilmi	Algeria	Assistant Prof, King Abdulaziz University
Timaa Hasan Khaddor	Syria	Bim master's student at Syrian virtual university

Reviewer:

Siham Barakat	Lebanon	Australian Council for Educational Research

Complications

The BIM Dictionary in Arabic Countries

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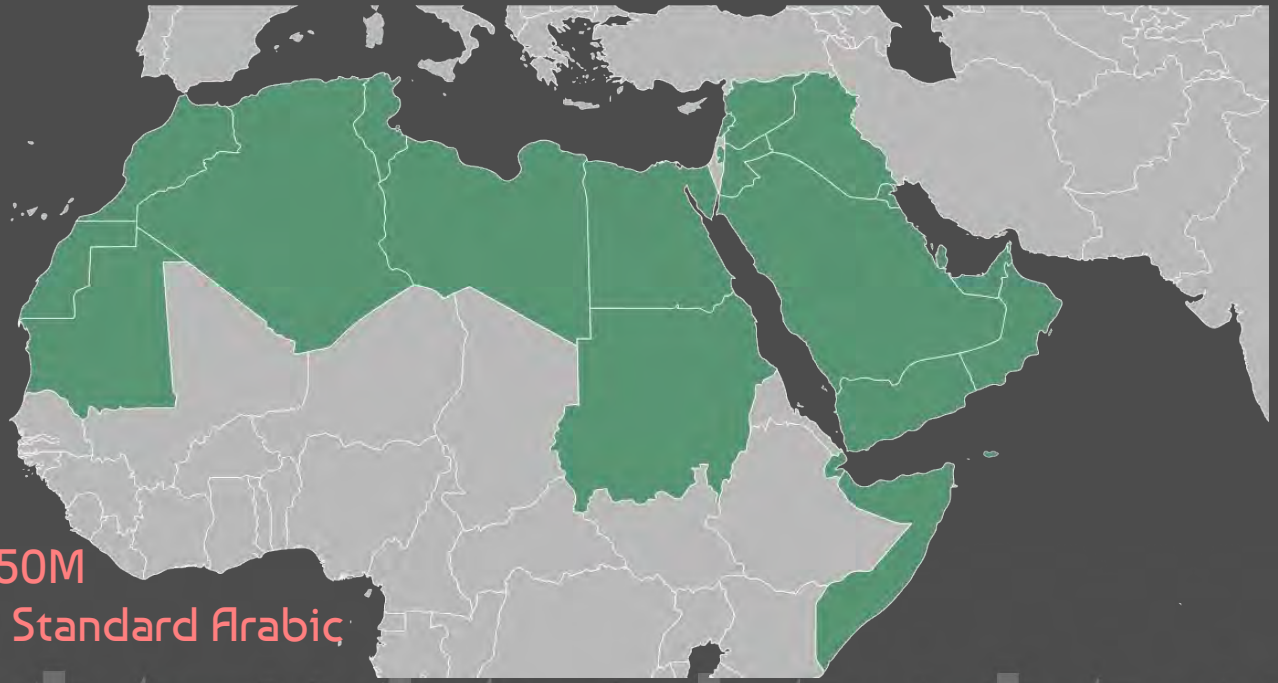

450M

300M Modern Standard Arabic

Arabic vs English

- Arabic texts are written and read from right to left
- Arabic language has diacritics as they are used instead of vowels sounds in many cases
- There is no distinction between lower and upper cases
- Arabic differentiates between females and males in its sentence structure, words, verbs, pronouns.
- It even has specifications for you and they in singular, plural, male and female forms.

ادرس الهندسة

I(am) **teach(ing)** engineering

I (am) **study(ing)** engineering

Study engineering

مهندس (مُهَنْدِسْ)

Engineer(Muhandis)

Arabic vs English

BIMe INITIATIVE

ا

Alif

a

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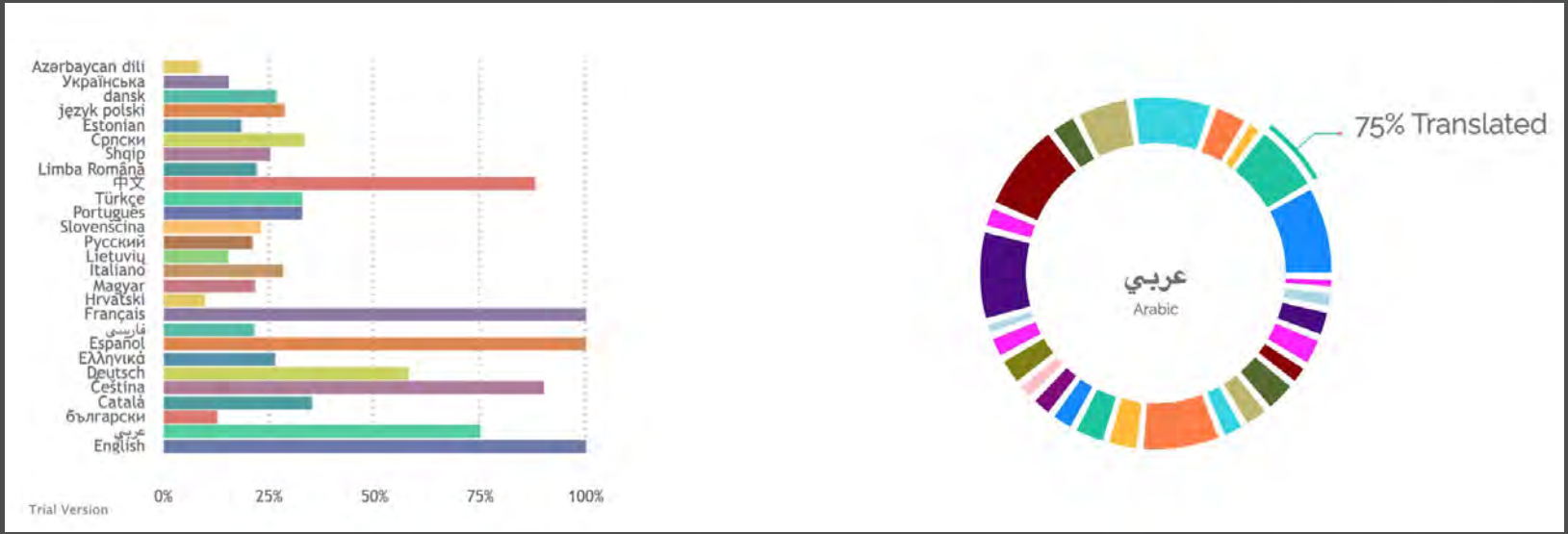
e a u/oa



607 translated terms

The BIM Dictionary in Arabic Countries

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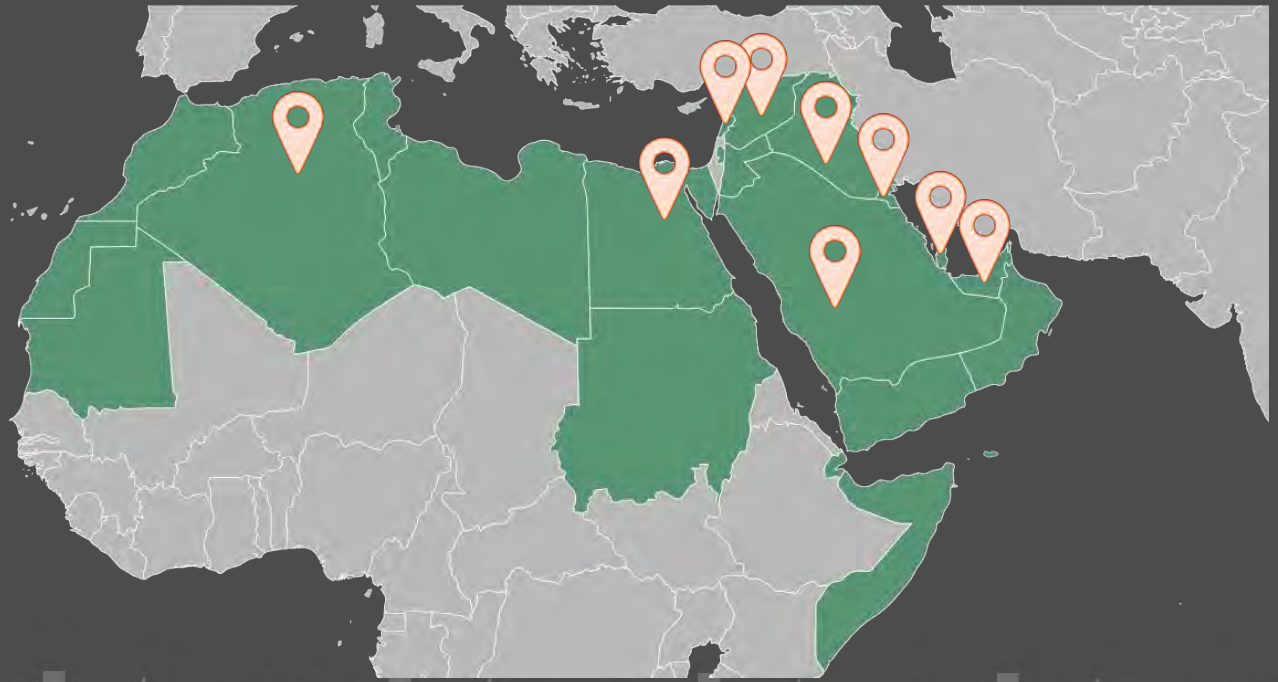

Academia Industry

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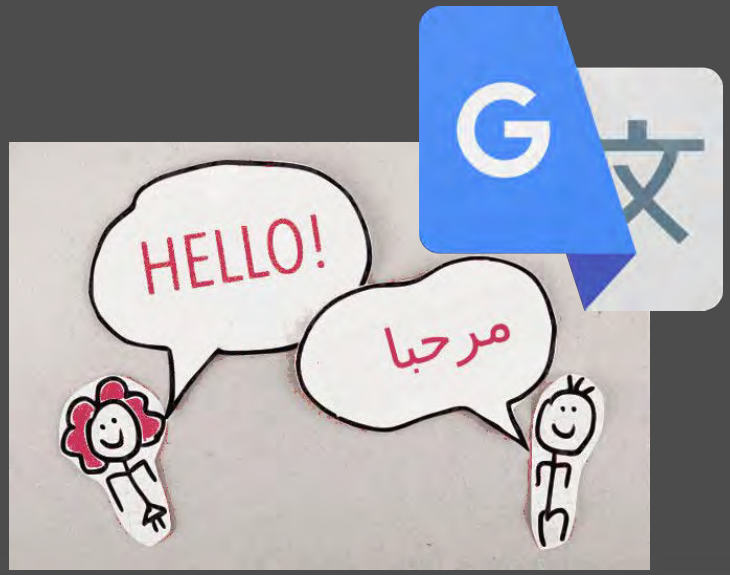
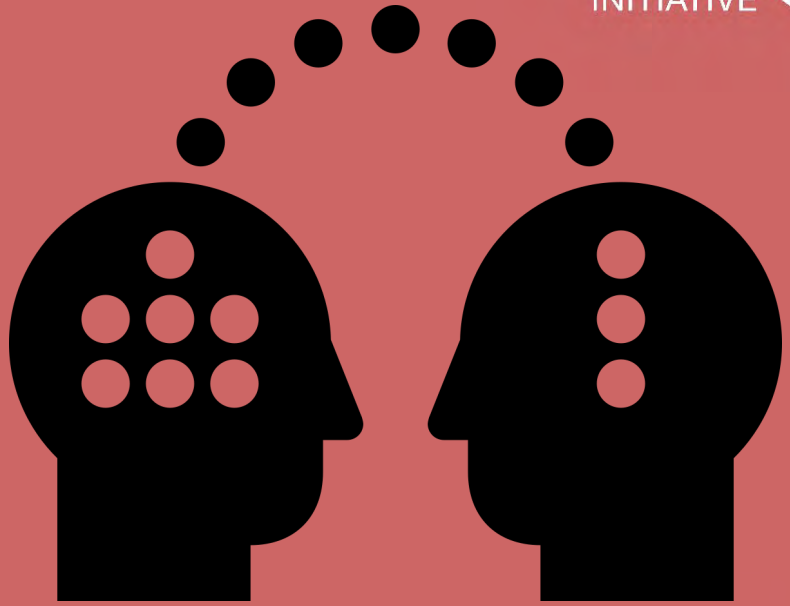
Lessons learned





Transferring Knowledge

Kerem İlhami Buğdaycıoğlu

ISO TERMS

A BIM Dictionary

A2 Canonical Terms

A2.16 ISO Standards microproject.

BIMe INITIATIVE

Efforts by;

Dr. Bilal Succar
Dimitri Daniaud
Kerem İ. Buğdaycıoğlu

Target

The A2.16 microproject's target is to align existing canonical (English) *terms and their descriptions* with relevant international standards *terms and their definitions*.

This alignment will minimise any divergence between terms used within BIMe Initiative Projects and those defined within published standards.

Why?

As many terms within ISO standards have now become commonly used, it is important to include them in the BIM Dictionary.

Making them available 'as is' will not add significant value as these terms can be found through the ISO Online Browsing Platform (OBP).

BIMe INITIATIVE

Intention of alignment:

- Assist practitioners to quickly locate relevant ISO terms through an intuitive search engine
- Add context to terms through descriptions, explanations, and examples
- Allow linking to these explanations, adding personal notes, and creating personal term lists
- Connect these terms to other terms from outside the standards through contextual links and – where possible – diagrams and interactive charts

Challenges

The copyrighted status of ISO documents which limits adaptation efforts to what can be considered as fair use of adapted materials

The complexity of many ISO standards caused by high-level abstractions (concepts requiring specialist interpretation), deployment of quasi-contractual language (e.g. shall vs. should), and term duplication but with varying definitions

The use of terminology that conflate information management, project management, and procurement models (e.g. Appointing Party and Appointed Parties).

These and other challenges are navigated by the project team to deliver a more accessible, cohesive, and simplified exploration of common terms derived from international standards.

Which?

This alignment effort focuses on documents published by ISO covering topics of current relevance to practitioners across the Built Environment related to BIM.

The first set to focus on is the ISO 19650 suite of documents.

Included Terms

Terms appearing under section 3 – **Terms and Definitions** –

within ISO documents.

There are however terms not defined in section 3 but still warrant

(e.g. Lead Appointed Party and Function)

inclusion **(if a term is not yet in the dictionary)**

or *alignment* (if the term is already included in the dictionary).

Extending the effort to include these terms is intended to improve overall comprehension of standards' texts and make them more accessible to non-specialists.

Inclusion & Alignment
syntactical rules

Alignment of terms will be expressed as follows:

The ISO Definition will be listed firs

The ISO Definition will be shown within “parentheses”

The ISO Definition will be followed by document number and item number for easy reference

BIMe INITIATIVE

Extension of ISO Definitions will be conducted – where needed – as follows:

The ISO Definition may include *inline links* to other terms provided pop-up Descriptions do not contradict with the Definition

The ISO Definition may be followed with explanations or examples

Inclusion & Alignment
syntactical rules

Alignment of terms will be expressed as follows:

The ISO Definition will be listed firs

The ISO Definition will be shown within “parentheses”

The ISO Definition will be followed by document number and item number for easy reference

Inclusion & Alignment
syntactical rules

Example

- ACTOR

A "person, organization or organizational unit involved in a construction process" [[ISO 19650-1]] (3.2.1). More generally, an actor can be a machine (computer), human, or their combinations (e.g. human-controlled robot or autonomous cyborg) tasked with any activity to design, deliver, or utilise an [[Asset]]

TERM TITLE	ISO 19650 Parts	Current Description in BIM Dictionary	New Description in BIM Dictionary starting from E then combined with D and F (notes)	Similar Term	Also Refer to	ISO BASED SUMMARY DESCRIPTION (Proposal)	REPHRASED ISO & ADAPTED SUMMARY DESCRIPTION (Proposal)	ISO Definition	COMMENTS by Bilal	Priority	Status	Status
Acceptance criteria	2	-	The "evidence required for considering that requirements have been fulfilled" [[ISO 19650-2]] (3.1.1.1). The evidence is established by assessing a specific service or a product against a predefined quality level, price point, or detailed [[Information Specification]]s			Evidence required for considering that requirements have been fulfilled (Source: [[ISO 19650-2/3.1.1.1]])	Proof (of action, thing) needed or necessary for the fullfillment of a requirement.	ISO 19650-2/3.1.1.1 acceptance criteria evidence required for considering that requirements have been fulfilled [SOURCE: ISO 22263:2008, 2.1]	EXPLAIN		Done	Published
Actor	1	-	A "person, organization or organizational unit involved in a construction process" [[ISO 19650-1]] (3.2.1). More generally, an actor can be a machine (computer), human, or their combinations (e.g. human-controlled robot or autonomous cyborg) tasked with any activity to design, deliver, or utilise an [[Asset]]			person, organization or organizational unit involved in a construction process (Source: [[ISO 19650-1/3.2.1]])	An individual (human or machine), organization or organizational unit (consists of human or/and machine) unit in a construction process (design to construction and to operation, whole life-cycle).	ISO 19650-1/3.2.1 actor person, organization or organizational unit involved in a construction process Note 1 to entry: Organizational units include, but are not limited to, departments, teams. Note 2 to entry: In the context of this document, construction processes take place during the delivery phase (3.2.11) and the operational phase (3.2.12). [SOURCE: ISO 29481-1:2016, 3.1, modified — The words "such as a department, team, etc." have been	EXTEND The term in ISO cotradicts with the Actor Network Theory followed by the BIMei Itegrated Information project. The description will need to be expanded.		Done	Published
AIM Asset Information Model	1	Country Specific UK Definition: A sub-type of [[Information Model]]s supporting the maintenance, management and operation of an asset throughout its lifecycle. An Asset Information Model (AIM) is used (a) as a repository for all information about the asset; (b) as a means to access/link to enterprise systems (e.g. CMMS and BMS); and (c) as a means to receive and centralize information from other parties throughout	An "[[Information Model]] relating to the [[Operational Phase]]" [[ISO 19650-1]] (3.3.9). The Asset Information Model (AIM) supports the maintenance, management and operation of an [[Asset]] throughout its [[Asset Life Cycle]]. AIM can act (i) as a repository for all [[Asset Information]]; (ii) as a means to access/link to enterprise systems (e.g. CMMS and BMS); and (iii) as a means to receive and centralise information from other [[Project Participant]]s throughout [[Project Lifecycle Phase]]s			Information model relating to the operational phase. (Source: [[ISO 19650-1/3.3.9]])	Information model that is connected to/to be used in the operational phase.	ISO 19650-1/3.3.9 asset information model AIM information model (3.3.8) relating to the operational phase (3.2.12)	Published		Done	Published
AIR Asset Information Requirements	1	Country Specific UK Definition: The data or information requirements related to an [[Asset]]. Asset Information Requirements (AIR) are typically fed into the [[Asset Information Model]] and form part of the [[Employer's Information Requirement]]s	The "information requirements in relation to the operation of an asset" [[ISO 19650-1/3.3.4]] that covers financial, managerial, technical, and security aspects. On the technical side, AIR specifies - at the start of the [[Life Cycle]] - the [[Asset Information Model]] to be delivered by the [[Delivery Team]] as specified by the [[Appointing Party]]			Information requirements in relation to the operation of an asset. (Source: [[ISO 19650-1/3.3.4]])	Information requirements in relation to the operation of an asset that set out commercial and managerial aspects (which include information production methods, procedures and information standards to be followed by the delivery team) and the technical aspects (which specify the information needed to reply the asset related [[OIR]]) of producing asset information. AIR should be able to be used, react to each trigger event during the asset's operation as well as	ISO 19650-1/3.3.4 asset information requirements AIR information requirements (3.3.2) in relation to the operation of an asset (3.2.8)	UPDATE If information flow or information hierarchy are neeed (need to be explained), we can create a new term or daigram to explain this. Or we can refer to the Extended Description that		Done	Published

TERM TITLE	ISO 19650 Parts	Current Description in BIM Dictionary	New Description in BIM Dictionary starting from E then combined with D and F (notes)	Similar Term	Also Refer to	ISO BASED SUMMARY DESCRIPTION (Proposal)	REPHRASED ISO & ADAPTED SUMMARY DESCRIPTION (Proposal)	ISO Definition	COMMENTS by Bilal	Priority	Status	Status
AIR Asset Information Requirements	1	Country Specific UK Definition: The data or information requirements related to an [[Asset]]. Asset Information Requirements (AIR) are typically fed into the [[Asset Information Model]] and form part of the [[Employer's Information Requirement]]s	The "information requirements in relation to the operation of an asset" [[ISO 19650-1/3.3.4]] that covers financial, managerial, technical, and security aspects. On the technical side, AIR specifies - at the start of the [[Life Cycle]] - the [[Asset Information Model]] to be delivered by the [[Delivery Team]] as specified by the [[Appointing Party]]			Information requirements in relation to the operation of an asset. (Source: [[ISO 19650-1/3.3.4]])	Information requirements in relation to the operation of an asset that set out commercial and managerial aspects (which include information production methods, procedures and information standards to be followed by the delivery team) and the technical aspects (which specify the information needed to reply the asset related [[OIR]]) of producing asset information. AIR should be able to be used, react to each trigger event during the asset's operation as well as should be able to refer to security	ISO 19650-1/3.3.4 asset information requirements AIR information requirements (3.3.2) in relation to the operation of an asset (3.2.8)	UPDATE If information flow or information hierarchy are neeed (need to be explained), we can create a new term or daigram to explain this. Or we can refer to the Extended Description that explains the		Done	Publishe
Appointed party	1	-	The "provider of information concerning works, goods or services" [[ISO 19650-1]] (3.2.3) to an [[Appointing Party]]. An appointed party might be at the same time an [[Appointing Party]] on a different [[Information Management]] project (project as defined by ISO 19650-1)			Provider of information concerning works, goods or services Source: [[ISO 19650-1/3.2.3]])	The "provider of information concerning works, goods or services" [[ISO 19650-1]] (3.2.3) to an appointing party or a lead appointed party (or can be the lead itself).	ISO 19650-1/3.2.3 appointed party provider of information (3.3.1) concerning works, goods or services Note 1 to entry: A lead appointed party should be identified for each delivery team (3.2.6) but this can be the same organization as one of the task teams (3.2.7). Note 2 to entry: This term is used whether or not	EXPLAIN		Done	Publishe
Appointing party	1	-	The "receiver of information concerning works, goods or services from a lead appointed party" [[ISO 19650-1]] (3.2.4). An appointing party might be a client, a designer, a contractor, or an asset operator/manager			Receiver of information concerning works, goods or services from a lead appointed party (Source: [[ISO 19650-1/3.2.4]])	The "receiver of information concerning works, goods or services from a lead appointed party" [[ISO 19650-1]] (3.2.4) which can be referred to as wide variety of functions such as (but not limited to) client, asset owner, employer, asset operator, outsourced asset management provider etc.	ISO 19650-1/3.2.4 appointing party receiver of information (3.3.1) concerning works, goods or services from a lead appointed party (3.2.3) Note 1 to entry: In some countries the appointing party can be termed client (3.2.5), owner or employer but the appointing party is not limited to these functions. Note 2 to entry: This term is used whether or not	EXPLAIN		Done	Publishe
Appointment	1	-	The "agreed instruction for the provision of information concerning works, goods or services" [[ISO 19650-1]] (3.2.2). An appointment can either be formal (covered by a contract) between an [[Appointing Party]] and an [[Appointed Party]], or an informal agreement between parties			Agreed instruction for the provision of information concerning works, goods or services (Source: [[ISO 19650-1/3.2.2]])	"Agreed instruction for the provision of information concerning works, goods or services" [[ISO 19650-1]] (3.2.2) which can be formal or not.	ISO 19650-1/3.2.2 appointment agreed instruction for the provision of information (3.3.1) concerning works, goods or services Note 1 to entry: This term is used whether or not there is a formal appointment between the parties.	EXPLAIN		Done	Publishe
Asset		An asset is an entity of value	An "item, thing or entity that has potential or			Item, thing or entity that has	An asset is an entity or item (thing) with	ISO 19650-1/3.2.8	EXPLAIN			

TERM TITLE	ISO 19650 Parts	Current Description in BIM Dictionary	New Description in BIM Dictionary starting from E then combined with D and F (notes)	Similar Term	Also Refer to	ISO BASED SUMMARY DESCRIPTION (Proposal)	REPHRASED ISO & ADAPTED SUMMARY DESCRIPTION (Proposal)	ISO Definition	COMMENTS by Bilal	Priority	Status	Status
Asset	1	An asset is an entity of value. In [[Asset Management]], an asset refers to physical entities of tangible financial value similar to buildings, land, equipment, and inventory	An "item, thing or entity that has potential or actual value to an organization" [[ISO 19650-1]] (3.2.8). More generally, the term asset can either refer to a [[Digital Asset]] (e.g. a [[Model]] or [[Document]]) or used interchangeably with [[Physical Asset]], an entity of tangible financial value similar to buildings, land parcels, equipment, construction materials, and product			Item, thing or entity that has potential or actual value to an organization. (Source: [[ISO 19650-1/3.2.8]])	An asset is an entity or item (thing) with a value (actual/potential) for the organization or person. (Adapted from [[ISO 19650-1/3.2.8]]). In [[Asset Management]], an asset refers to physical entities of tangible financial value similar to buildings, land, equipment, and inventory.	ISO 19650-1/3.2.8 asset item, thing or entity that has potential or actual value to an organization [SOURCE: ISO 55000:2014, 3.2.1, modified — Note 1, 2 and 3 to entry have been removed.]	EXPLAIN		Done	Published
BEP BIM Execution Plan	2	Country Specific UK Definition: The BIM Execution Plan (BEP or BIMxP) is developed by suppliers - typically pre-contract to address the [[Employer's Information Requirements]] (EIR) - and defines how the information modelling aspects of a project will be carried out. A BIM Execution Plan clarifies roles and their responsibilities, standards to be applied and procedures to be followed. A BEP collates/references a number of other documents including the [[Master Information Delivery Plan]] (MIDP) and the [[Project Implementation Plan]] (PIP). The BEP may be updated after the contract has been awarded...Also refer to	The "plan that explains how the [[Information Management]] aspects of the [[Appointment]] will be carried out by the [[Delivery Team]]" [[ISO 19650-2]] (3.1.3.1). The term [[Plan]] in BIM Execution Plan (BEP) refers to a *response* to the [[Exchange Information Requirements]] and is delivered either as online input or as a compiled [[Document]] to the [[Appointing Party]]. There are two complementary versions of BEPs: 'pre-appointment' BEP proposed by each *prospective* Delivery Team during the tender process; and 'post-appointment' BEP delivered by the *selected* Delivery Team			The "plan that explains how the information management aspects of the appointment will be carried out by the delivery team." [[ISO 19650-2]] (3.1.3.1). BIM Execution Plan (BEP) has two versions in the information management process according to 19650 Part 2: 1-"Pre-Appointment" BEP (the proposal of each prospective [[Delivery Team]] during "Tender Process"), 2- BEP as one of the appointment documents of the (agreed) [[Delivery Team]] to be generated by the [[Lead Appointed Party]].	The "plan that explains how the informati	ISO 19650-2/3.1.3.1 BIM execution plan plan that explains how the information management aspects of the appointment will be carried out by the delivery team Note 1 to entry: The pre-appointment BIM execution plan focuses on the delivery team's proposed approach to information management and their capability and capacity to manage information.	EXPLAIN		Done	Published
Capability	-		The "measure of ability to perform and function" [[ISO 19650-1]] (3.3.18) in relation to (human) skill, knowledge, and experience. Capability (referred to as [[Competency]] by others) indicates the ability to perform a defined [[Information Management]] activity			Measure of ability to perform and function. (Source: [[ISO 19650-1/3.3.18]])	The "measure of ability to perform and function." [[ISO 19650-1]] (3.3.18) in relation to skill, knowledge or expertise. Capability refers to being able to perform a given activity.	3.3.18 capability measure of ability to perform and function Note 1 to entry: In the context of this document, this relates to skill, knowledge or expertise to manageinformation (3.3.1). [SOURCE: ISO 6707-1:2017, 3.7.1.11, modified — Note 1 to entry has been added.]	EXPLAIN Note: add refer to [[BIM Capability]]		Done	Published
Capacity	-		The "resources available to perform and function" [[ISO 19650-1]] (3.3.19) including the means and procedures necessary to complete an activity or deliver an outcome. Note: the term "function" here is not to be confused with how [[Function]] is used in [[ISO 19650-2]]			Resources available to perform and function (Source: [[ISO 19650-1/3.3.19]])	The means, procedures and "resources available to perform and function." [[ISO 19650-1]] (3.3.19) when managing information. Capacity refers to be able to complete an activity in the required time.	3.3.19 capacity resources available to perform and function Note 1 to entry: In the context of this document, this relates to means, resources and procedures to manage information (3.3.1).	EXPLAIN		Done	Published

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Client		-	An "[[Actor]] responsible for initiating a project and approving the brief" [[ISO 19650-1]] (3.2.5). A client is an example of an [[Appointing Party]]			Actor responsible for initiating a project and approving the brief (Source: [[ISO 19650-1/3.2.5]])	An "actor responsible for initiating a project and approving the brief." [[ISO 19650-1]] (3.2.5)	ISO 19650-1/3.2.5 client actor (3.2.1) responsible for initiating a project and approving the brief	EXPLAIN		Done	Published
Common Data Environment		Country Specific UK Definition: A single source of information which collects, manages and disseminates relevant, approved project documents for multidisciplinary teams in a managed process. A Common Data Environment (CDE) is typically served by a [[Document Management System]] that facilitates the sharing of data/information among [[Project Participant]]s. Information within a CDE need to carry one of four labels (or reside within one of four areas): [[Work in Progress Area]], [[Shared Area]], [[Published Area]], and	An "agreed source of [[Information]] for any given project or [[Asset]], for collecting, managing and disseminating each [[Information Container]] through a managed process" [[ISO 19650-1]] (3.3.15). A Common Data Environment (CDE) includes a 'CDE solution' and a 'CDE workflow' This CDE Workflow organises the flow and management of information across the whole [[Life Cycle]] of an [[Asset]] across four [[Information Container State]]s. The 'CDE solution' is a server-based or cloud-based technology with database management, transmittal, issue tracking, and related capabilities that support the CDE workflow		Common Information Environment	Agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process. (Source: [[ISO 19650-1/3.3.15]])	An "agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process." [[ISO 19650-1]] (3.3.15) The CDE solution provides the technology (with database management and transmittal capabilities) to support the CDE workflow which is describing the processes to be used for managing information through the whole life-cycle of an asset. There are four state definitions linked to each [[Information Container]], "Work in progress", "Shared", "Published" and "Archive" for which the transition from one to another is subjected to approval and authorization processes.	ISO 19650-1/3.3.15 common data environment CDE agreed source of information (3.3.1) for any given project or asset (3.2.8), for collecting, managing and disseminating each information container (3.3.12) through a managed process Note 1 to entry: A CDE workflow describes the processes to be used and a CDE solution can provide the technology to support those processes.	REPLACE Note: add refer to [[Common Information Environment]]		Done	Published
Delivery Phase		-	This phase is one "part of the [[Life Cycle]] during which an [[Asset]] is designed, constructed and commissioned"[[ISO 19650-1]] (3.2.11)		Operation Phase	Part of the life cycle during which an asset is designed, constructed and commissioned (Source: [[ISO 19650-1/3.2.11]])	One of the two main phases of a life cycle of an asset which consists design, construction and commissioning sub-phases.	ISO 19650-1/3.2.11 delivery phase part of the life cycle (3.2.10), during which an asset (3.2.8) is designed, constructed and commissioned Note 1 to entry: Delivery phase normally reflects a stage-based approach to a project.	EXPLAIN		Done	Published
Delivery Team		-	The "[[Lead Appointed Party]] and their [[Appointed Parties]]" [[ISO 19650-1]] (3.2.6) tasked with delivering a product or a service on a project. A Delivery Team is a subpart of the overall [[Project Team]] and can be of any size, from one person carrying out all the necessary functions through to complex, multi-layered [[Task Team]]s. An example of a [[Delivery Team]] is a structural works contractor, its concrete subcontractors, and their concrete suppliers			Lead appointed party and their appointed parties (Source: [[ISO 19650-1/3.2.6]])	Organization or organizational unit under the [[Project Team]] and [[Appointing Party]] which consists of "[[Lead Appointed Party]] and their [[Appointed Parties]]" [[ISO 19650-1]] (3.2.6) (e.g. a contractor for structural works with its subcontractors and the suppliers such as concrete supplier).	ISO 19650-1/3.2.6 delivery team lead appointed party (3.2.3) and their appointed parties Note 1 to entry: A delivery team can be any size, from one person carrying out all the necessary functions through to complex, multi-layered task teams (3.2.7). The size and structure of each delivery team are in response to the scale and complexity of the asset management or project delivery activities. Note 2 to entry: Multiple delivery teams can be appointed simultaneously and/or sequentially in connection with a single asset or project, in response to the scale and complexity of the asset management or project delivery activities. Note 3 to entry: A delivery team can consist of	EXPLAIN		Done	Published

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Detailed Responsibility Matrix [4]		-	An updated or refined version of the [[High Level Responsibility Matrix]]. This type of [[Responsibility Matrix]] identifies (i) what information to be produced; (ii) when and with whom the [[Information]] will be exchanged; and (iii) which [[Task Team]] will be responsible for its production. The Detailed Responsibility Matrix is generated by the Lead [[Appointed Party]] during the establishment of the appointment [[BIM Execution Plan]] then later updated and maintained throughout project [[Life Cycle]]				A refined version of [[High-level Responsibility Matrix which is identifying; (i) what information is to be produced, (ii) when and with whom the information is to be exchanged, and (iii) which task team is responsible for its production. Detailed responsibility matrix is produced by [[Lead AppointedParty]] through the establishment of appointment [[Bim Execution Plan]]activity and updated, maintained throughout [[life cycle]] (as		Is this term in ISO but not defined? If yes, we can add it. Kerem, can you please suggest a description that links well with other ISO terms?		Done	Published
Exchange Information Requirements		-	The "[[Information Requirement]]s in relation to an [[Appointment]]" [[ISO 19650-2]] (3.3.6) generated by an [[Appointing Party]]. The Exchange Information Requirements (EIR) is a list of requirements defined within a document, an online form, or possibly even an email message. An EIR sets out the managerial, commercial, and technical aspects as to satisfy what was defined in [[Project Information Requirements]] and [[Asset Information			Information requirements in relation to an appointment (Source: [[ISO 19650-2/3.3.6]])	The "information requirements in relation	ISO 19650-1/3.3.6 exchange information requirements EIR information requirements (3.3.2) in relation to an appointment (3.2.2)	This row needs to be merged with the one above		Done	Published
Federation		-	The "creation of a composite [[Information Model]] from separate [[Information Container]]s" [[ISO 19650-1]] (3.3.11) delivered by a single or multiple [[Task Team]]s. A federation 'strategy' defines how Information Containers are combined/separated according to agreed 'information container breakdown structures'. Federation can be by discipline, spatial subdivision, system, phase, security requirement, or responsibility according to [[Levels of Information Need]]. As opposed to 'integration', federation does not necessarily assume a unified/single data structure but an		Integration	Creation of a composite information model from separate information containers (Source: [[ISO 19650-1/3.3.11]])	The "creation of a composite information model from separate [[Information Containers]]" [[ISO 19650-1]] (3.3.11) which can be delivered from different task teams. [[Federation]] is used to work simultaneously, support information security, to ease information transmissions and to define the scope of services of each task team.	ISO 19650-1/3.3.11 federation creation of a composite information model (3.3.8) from separate information containers (3.3.12) Note 1 to entry: The separate information containers used during federation can come from different task teams (3.2.7).	EXPLAIN Note: add Refer to [[Federated Information Model]]		Done	Published
High Level Responsibility Matrix		-	A [[Responsibility Matrix]] identifying the				A [[Responsibility Matrix]] which is		Is this term in ISO		Done	Published
Information		The facts provided or learned	The "reinterpretable representation of data in a			Reinterpretable representation	A "reinterpretable representation of data	ISO 19650-1/3.3.1	EXPLAIN		Done	Published
Information Container		-	A "named persistent set of [[Information]]			Named persistent set of	A "named persistent set of	ISO 19650-1/3.3.12	EXPLAIN		Done	Published
Information Container State			The state of [[Information Container]]				"Work in progress", "Shared", "Published"				Done	Published
Information Delivery Milestone		-	A "scheduled event for a predefined			Scheduled event for a	A "scheduled event for a predefined	ISO 19650-2/3.1.3.2	EXPLAIN		Done	Published
Information Exchange (verb)		-	The "act of satisfying an [[Information			"Act of satisfying an information	The "act of satisfying an information requi	ISO 19650-1/3.3.7	EXPLAIN		Done	Published
Information Management Responsibility Matrix	1	-	Information Management Responsibility Matrix supports establishing the scope of efforts and services. This [[Responsibility Matrix]] is generated by the [[Appointing Party]] (or its	Information Management			(also named as [[Information Management Assignment Matrix]]) Information management activities related [[Responsibility Matrix]] which		Is this term in ISO but not defined? If yes, we can add it. Kerem, can you		Done	Published

TERM TITLE	ISO 19650 Parts	Current Description in BIM Dictionary	New Description in BIM Dictionary starting from E then combined with D and F (notes)	Similar Term	Also Refer to	ISO BASED SUMMARY DESCRIPTION (Proposal)	REPHRASED ISO & ADAPTED SUMMARY DESCRIPTION (Proposal)	ISO Definition	COMMENTS by Bilal	Priority	Status	Status
Information Exchange (verb)		-	The "act of satisfying an [[Information			"Act of satisfying an information	The "act of satisfying an information requi	ISO 19650-1/3.3.7	EXPLAIN		Done	Published
Information Management Responsibility Matrix	1	-	Information Management Responsibility Matrix supports establishing the scope of efforts and services. This [[Responsibility Matrix]] is generated by the [[Appointing Party]] (or its representative) and includes assignments of [[Information Management]] activities to all	Information Management Assignment			(also named as [[Information Management Assignment Matrix]]) Information management activities related [[Responsibility Matrix]] which contains; (i) the information management activities under the task		Is this term in ISO but not defined? If yes, we can add it. Kerem, can you please suggest a description that		Done	Published
Information Model		Country Specific UK Definition:	A "set of structured and unstructured			Set of structured and	A "set of structured and unstructured	ISO 19650-1/3.3.8	REPLACE		Done	Published
Information Requirement		-	A "specification for what, when, how and for				A "specification for what, when, how and	ISO 19650-1/3.3.2	EXPLAIN		Done	Published
Key Decision Point		-	A "point in time during the [[Life Cycle]] when a			Point in time during the life		ISO 19650-1/3.2.14	EXPLAIN		Done	Published
Lead Appointed Party		-	The party leading a [[Delivery Team]] and thus			The [[Appointed Party]] within					Done	Published
Life Cycle		-	The whole "life of the asset from the definition of its requirements to the termination of its use, covering it conception, development, operation, maintenance support and disposal" [[ISO 19650-1]] (3.2.10). In addition to [[Asset]]s, the term 'life cycle' (or lifecycle) can also cover [[Information Lifecycle]], Product Lifecycle, and [[Project Lifecycle Phase]]s		[[Asset Life Cycle]]	Life of the asset from the definition of its requirements to the termination of its use, covering it conception, development, operation, maintenance support and disposal (Source: [[ISO 19650-1/3.2.10]])		ISO 19650-1/3.2.10 life cycle life of the asset (3.2.8) from the definition of its requirements to the termination of its use, covering its conception, development, operation, maintenance support and disposal [SOURCE: ISO/TS 12911:2012, 3.13, modified — The words "stages and activities spanning the life of the system" have been replaced with "life of the asset"; NOTEs 1 and 2 have been removed.]	EXPLAIN Note: add Refer to [[Product Lifecycle Management]]		Done	Published
Master Information Delivery Plan		Country Specific UK Definition:	A "plan incorporating all relevant [[Task			Plan incorporating all relevant	A "plan incorporating all relevant [[task	ISO 19650-2/3.1.3.3	REPLACE		Done	Published
Operational Phase		The Operation Phase is the	This phase is "part of the [[Life Cycle]], during		[[Delivery	Part of the life cycle, during		ISO 19650-1/3.2.12	EXPLAIN		Done	Published
Organizational Information Requirement		Country Specific UK Definition:	The "[[Information Requirement]]s in relation to			Information requirements in		ISO 19650-1/3.3.3	EXPLAIN		Done	Published
Plan of Work			The "document that details principal stages in			Document that details principal	The "document that details principal	ISO 19650-2/3.1.2.2			Done	Published
Project information		-	The "[[Information]] produced for, or utilized in,			Information produced for, or	An "information produced for, or utilized ir	ISO 19650-1/3.2.9	EXPLAIN		Done	Published
Project information model		-	An "[[Information Model]] relating to the				delivery phase" [[ISO 19650-1]](3.3.10)	ISO 19650-1/3.3.10	EXPLAIN		Done	Published
Project information requirements		-	The "[[Information Requirement]]s in relation to			Information requirements in	The "information requirements in	ISO 19650-1/3.3.5	EXPLAIN		Done	Published
Project Team	2	A Project Team refers to the	The "[[Appointing Party]] and all [[Delivery		[[Project	Appointing party and all delivery	The "[[Appointing Party]] and all	ISO 19650-2/3.1.2.1	REPLACE		Done	Published
Responsibility Matrix	1	Country Specific UK Definition:	The "chart that describes the participation by			Chart that describes the	The "chart that describes the	19650-1/3.1.1	REPLACE		Done	Published
Reference Information	2		The [[Information]] provided by the [[Appointing Party]] and/or [[Lead Appointed Party]] to be used as a reference by the [[Delivery Team]] (e.g. geospatial coordinates and topographical maps). Reference Information is typically shared at the start of the [[Appointment]] and may be updated as needed. For example, the client shares a land parcel's contour map, and the general contractor adds elevation information to be used by the excavation sub-contractor		Shared Resources						Done	Published

45 Terms published

BIMe INITIATIVE

Responsibility Matrix	1	Country Specific UK Definition:	The "chart that describes the participation by		Chart that describes the	The "chart that describes the	19650-1/3.1.1	REPLACE	Done	Published
Reference Information	2		The [[Information]] provided by the [[Appointing Party]] and/or [[Lead Appointed Party]] to be used as a reference by the [[Delivery Team]] (e.g. geospatial coordinates and topographical maps). Reference Information is typically shared at the start of the [[Appointment]] and may be updated as needed. For example, the client shares a land parcel's contour map, and the general contractor adds elevation information to be used by the excavation sub-contractor	Shared Resources					Done	Published
Shared Resource	2		The [[Information]] provided by the [[Appointing Party]] and/or [[Lead Appointed Party]] to be used as a resource by the [[Delivery Team]] (e.g. templates, style libraries, and object libraries). Shared Resources may be shared at the start of [[Appointment]] and then extended as needed. For example, a supermarket chain 'client' may provide their design team with access to the [[Model Component Libray]] of their equipment so they can utilise or update the [[Model Component]]s as needed	Reference Information	Tashakor aederem				Done	Published
Status code		-	A "meta-data describing the suitability of the		Meta-data describing the	A "meta-data describing the suitability of	ISO 19650-1/3.3.13	EXPLAIN	Done	Published
Task Information Delivery PlanTIDP		Country Specific UK Definition:	The "schedule of [[Information Container]]s and	Task	Schedule of information	The "schedule of [[information container]	ISO 19650-2/3.1.3.4	REPLACE	Done	Published
Task Team		BIM Taskforce: A group of	A team of "individuals assembled to perform a		Individuals assembled to	A group or team of "individuals	ISO 19650-1/3.2.7	EXPLAIN	Done	Published
Trigger event		A"planned or unplanned event	A "planned or unplanned event that changes an		Planned or unplanned event		ISO 19650-1/3.2.13	EXPLAIN	Done	Published

26 Terms
Awaiting

5	the BIM Dictionary)			
	Information Management Function	An Information Management Function in [[ISO 19650-1]] refers to the *responsibility* to conduct an information task or deliver an information outcome. A 'function' should not be confused with a **Role, Job Title, or Profession** (e.g. Team Leader, BIM Manager, or Architect...). Examples of **Information Management Functions** include checking [[Information Container]]s for inaccuracies or exhanging occupancy [[Information]] with local authorities. An Information Managment Function can be completed by any [[Actor]] (individual or organisation) which has the capability to perform the function. The same function may be performaed by different actors throughout the [[Lifecycle]] of an information project. There are different types of Information Management Fucntions as defined within [[Asset Information Management Function]]s, [[Project Information Management Function]]s, and [[Task Information Management Function]]s Function is a another way of say 'Task'? ...add note releted to the difference between Function and Role	management with responsibility, authority, and the scope of a task. [[Information Management Function]] is not a job title, professional, role or other designation also not referring to design responsibilities and other functions such as project management, construction leadership e.g. but can be embedded to these. It is the function directly in the scope information management itself. [[Information Management Function]]s are recommended to be communicated in the appointments and to be allocated to parties (appointing party, appointed parties, lead appointed parties) according to their availability and ability. Three types are mentioned in ISO 19650; 1. Asset Information Management Functions (which are assigned at all times during the asset [[Life Cycle]]) 2. Project Information Management Functions (which are assigned at all times during the project according to the procurement route) ; and 3. Task Information Management Fuctions.	Awaiting feedback from David Churcher
6	**Information Management Responsibility Matrix**	Information Management Responsibility Matrix supports establishing the scope of efforts and services. This [[Responsibility Matrix]] is generated by the [[Appointing Party]] (or its	Inform ation Manag ement	(also named as [[Information Management Assignment Matrix]]) Information management activities related [[Responsibility Matrix]] which	Is this term in ISO but not defined? If yes, we can add it. Kerem, can you

Session 6

The New BIM Dictionary Platform

The session will showcase an upcoming, major BIM Dictionary Platform update intended with many new types of content, teams, and roles

Dr Bilal Succar

Director, ChangeAgents AEC, Australia

Bilal is an **independent researcher** and an experienced **international consultant** in the fields of performance assessment and improvement. Dr Succar worked as a designer, site manager, trainer, and BIM specialist across the Middle East and Australia from 1992-2003. In 2004, he established **ChangeAgents AEC**, an **open-innovation consultancy** operating out of Melbourne, Australia. In 2016, Dr Succar founded the not-for-profit **BIMe Initiative**, a Community of Research and Practice aiming to accelerate the digital transformation of the built environment through process innovation and open knowledge-sharing. Balancing academic research with digital practice, Bilal published well-cited peer-reviewed articles, led high-impact national initiatives, and delivered topical keynote lectures and strategic workshops in numerous countries.

Towards a Knowledgebase for the Built Environment

Towards a Knowledgebase

3 Foundations

1 Contributing researchers and experts

2 Flexible and interconnected knowledge structure

3 Robust and intuitive Software Solution

3 Challenges

1 Publicity + Outreach

2 Governance + Team Management

3 Platform development and maintenance costs

Foundation 1
Contributing researchers and experts

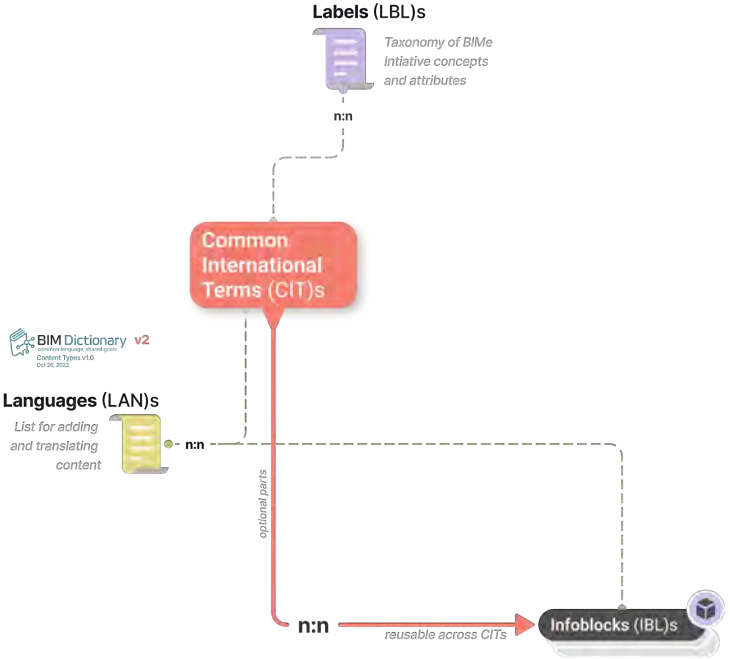
as covered in
Session 5

BIMe INITIATIVE

Foundation 2

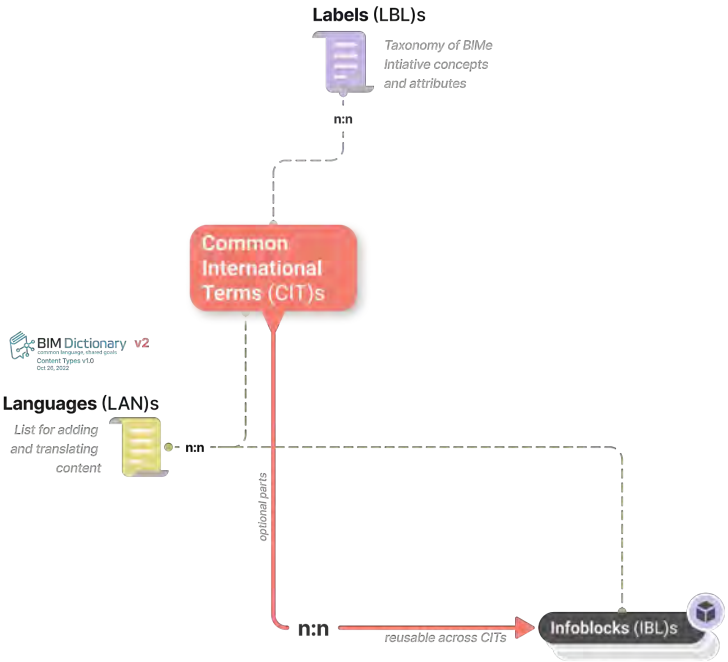
Flexible and interconnected Knowledge Structure

Flexible and interconnected Knowledge Structure



U2

Flexible and interconnected Knowledge Structure



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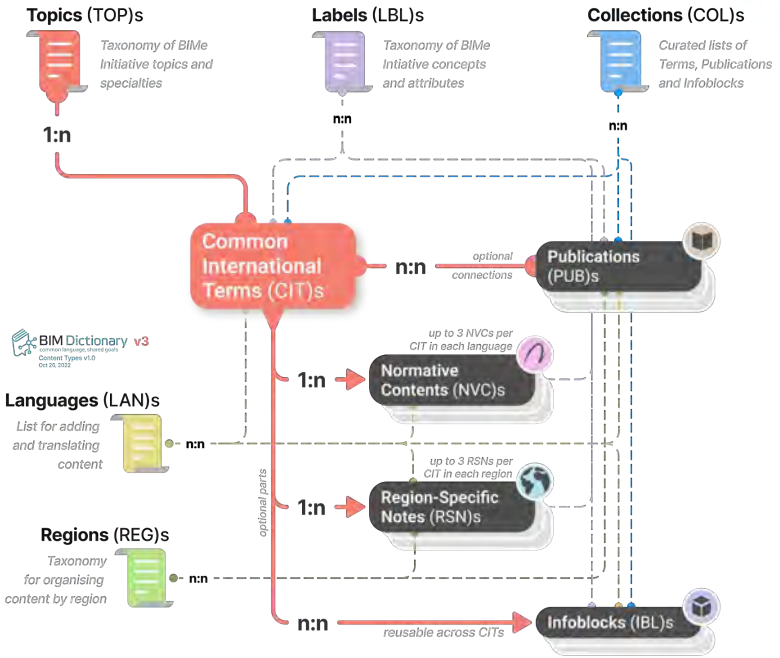
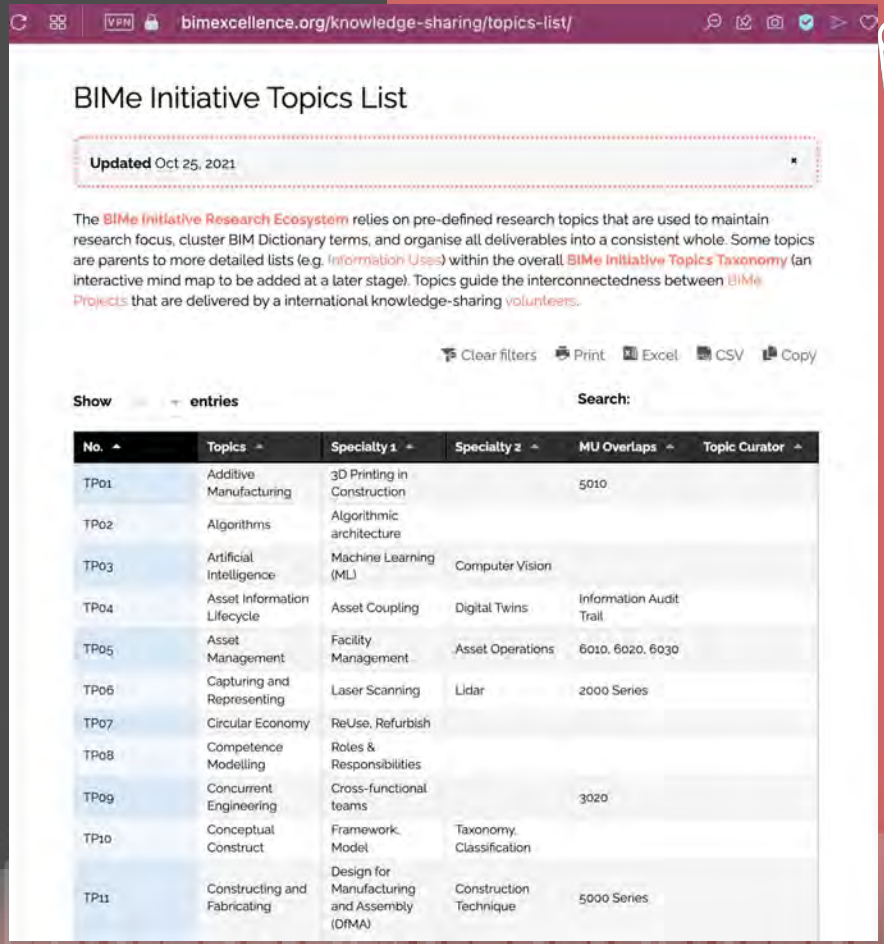


U3

Flexible and interconnected Knowledge Structure

Topics



bimexcellence.org/knowledge-sharing/topics-list/

BIMe Initiative Topics List

Updated Oct 25, 2021

The BIMe Initiative Research Ecosystem relies on pre-defined research topics that are used to maintain research focus, cluster BIM Dictionary terms, and organise all deliverables into a consistent whole. Some topics are parents to more detailed lists (e.g. Information Uses) within the overall BIMe Initiative Topics Taxonomy (an interactive mind map to be added at a later stage). Topics guide the interconnectedness between BIMe Projects that are delivered by a international knowledge-sharing volunteers.

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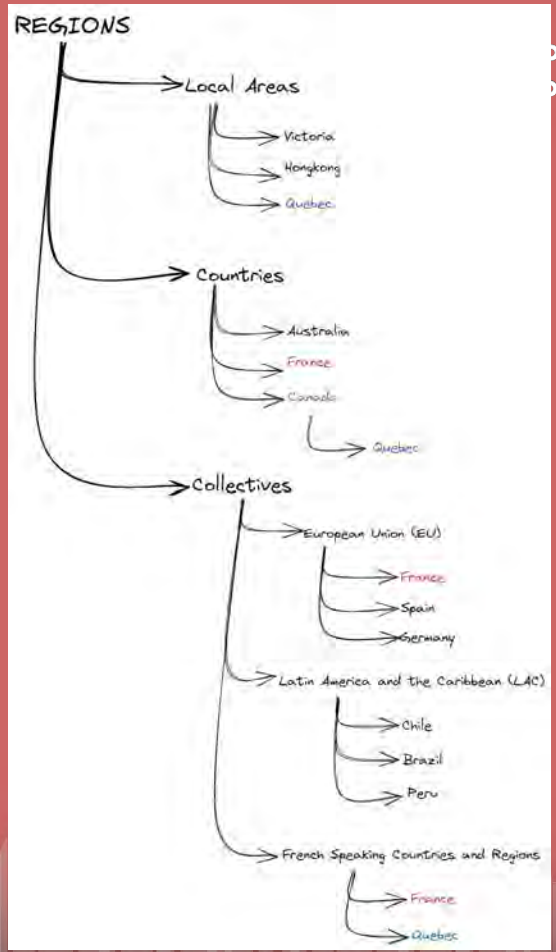
Show entries Search:

No.	Topics	Specialty 1	Specialty 2	MU Overlaps	Topic Curator
TP01	Additive Manufacturing	3D Printing in Construction		5010	
TP02	Algorithms	Algorithmic architecture			
TP03	Artificial Intelligence	Machine Learning (ML)	Computer Vision		
TP04	Asset Information Lifecycle	Asset Coupling	Digital Twins	Information Audit Trail	
TP05	Asset Management	Facility Management	Asset Operations	6010, 6020, 6030	
TP06	Capturing and Representing	Laser Scanning	Lidar	2000 Series	
TP07	Circular Economy	ReUse, Refurbish			
TP08	Competence Modelling	Roles & Responsibilities			
TP09	Concurrent Engineering	Cross-functional teams		3020	
TP10	Conceptual Construct	Framework, Model	Taxonomy, Classification		
TP11	Constructing and Fabricating	Design for Manufacturing and Assembly (DfMA)	Construction Technique	5000 Series	

Flexible and interconnected Knowledge Structure

Regions

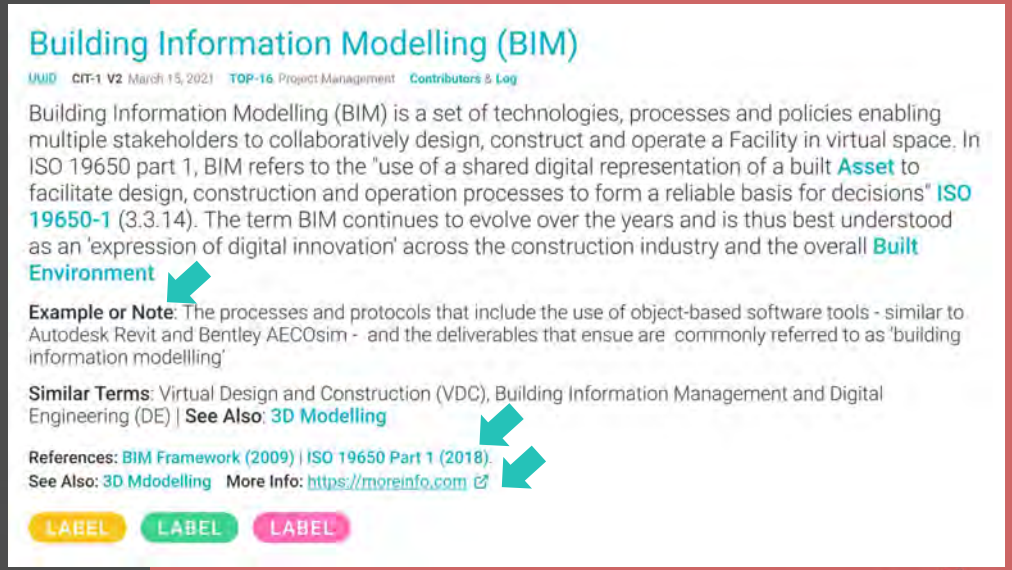
There are 3 types of Regions: a **Local Area** (ex: Quebec), a **Country** (e.g. Canada), or a **Collective** of multiple countries and local areas (e.g. North America or French-speaking jurisdictions).



Flexible and interconnected Knowledge Structure

The BIM Dictionary provide access to hundreds of **Common International Terms** (CITs). This "common" content is from peer-reviewed sources and is composed of **Canonical Content** in *English* + its **Translated Content** in *Languages Other Than English (LOTE)*.

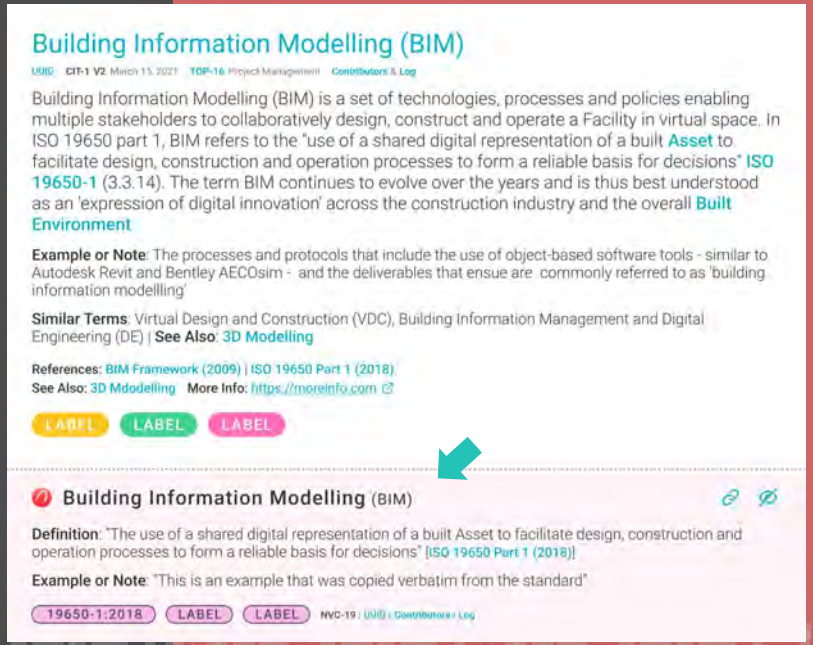
CITs are now expanded to include new fields and connections.



Flexible and interconnected Knowledge Structure

Normative Content (NVC) is an alternative definition added to new and published CITs. The definition is derived from standards and norms (e.g. documents issued by ISO, CEN, AFNOR, ABNT, ANSI, and similar organisations).

Up to 3 NVCs for each Term per language can be supported.



Flexible and interconnected Knowledge Structure

Region-specific Notes (RSN)s are now supported as an extension to CITS. Regions refer to a geographical location, geopolitical zone, or language zone.

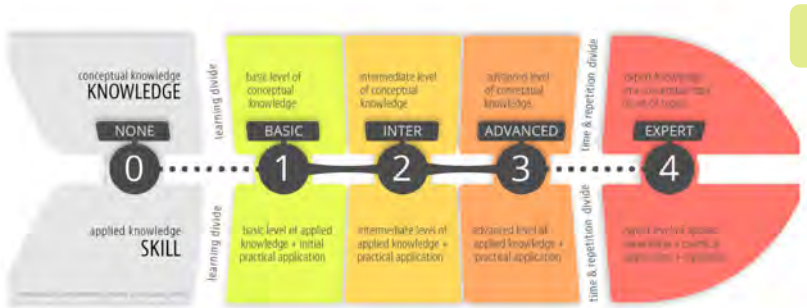
Up to 3 RSNs for each Term per Region can be supported.

Flexible and interconnected Knowledge Structure

Information Block are custom, reusable content that can be attached to multiple Common terms. Infoblocks are now in four types - **Text**, **Image**, **Video**, or **Code snippet** - and can be translated, collated, and searched.

A large number of IBLs can be connected to each term. IBLs can be translated.

image



The Individual Competency Index (ICI) measures both **conceptual knowledge** (referred to as knowledge) and **procedural knowledge** (referred to as skill) which are needed by individuals in order to perform a defined *activity* or deliver a measurable *outcome*.

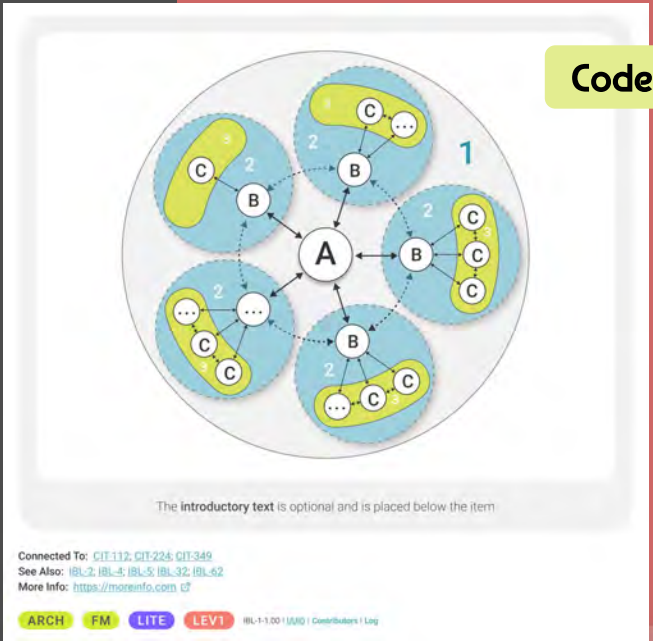
See Also: IBL-2; IBL-4; IBL-5; IBL-32; IBL-62
More Info: https://www.bimframework.info/2014/03/individual-competency-index.html

LEARN ASSESS SKILL COMP IBL-871-1.4 | UUID | Contributors | Log

Flexible and interconnected Knowledge Structure

Information Block are custom, reusable content that can be attached to multiple Common terms. Infoblocks are now in four types - **Text**, **Image**, **Video**, or **Code snippet** - and can be translated, collated, and searched.

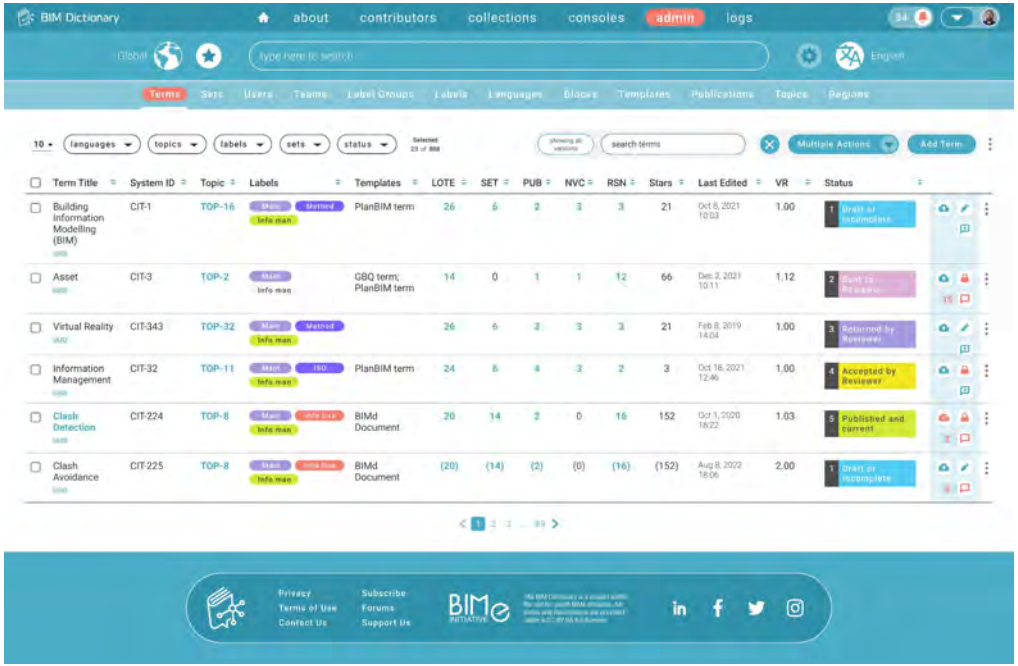
A large number of IBLs can be connected to each term. IBLs can be translated.



Foundation 3

A robust and intuitive Software Solution

Robust and intuitive Software Solution



0 Not Available

1 Draft or Incomplete

2 Sent to Reviewer

3 Returned by Reviewer

4 Accepted by Reviewer

5 Published and current

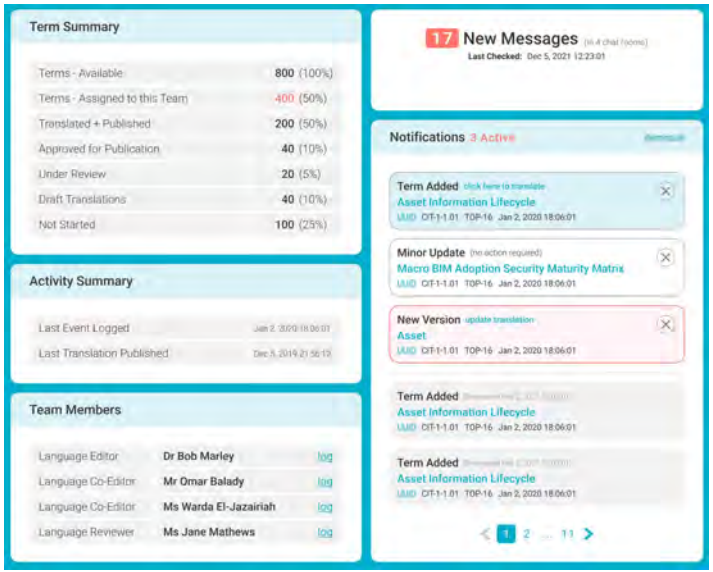
6 Outdated, refer to new version

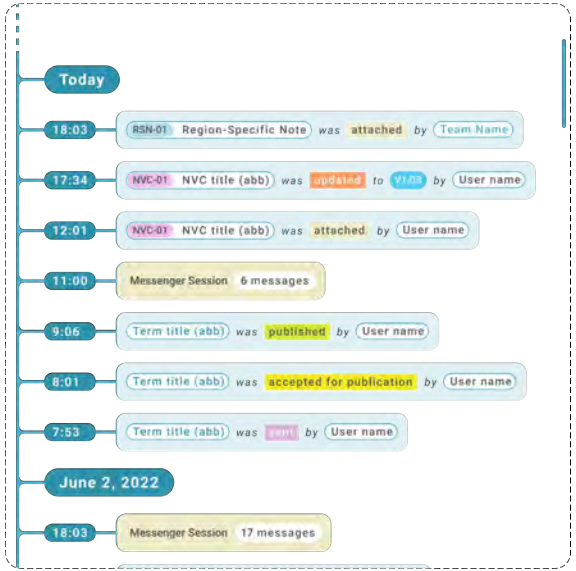
X Archived, no longer available

powerful admin tools

unified flows

Robust and intuitive Software Solution





powerful consoles for contributors

detailed logging of all events

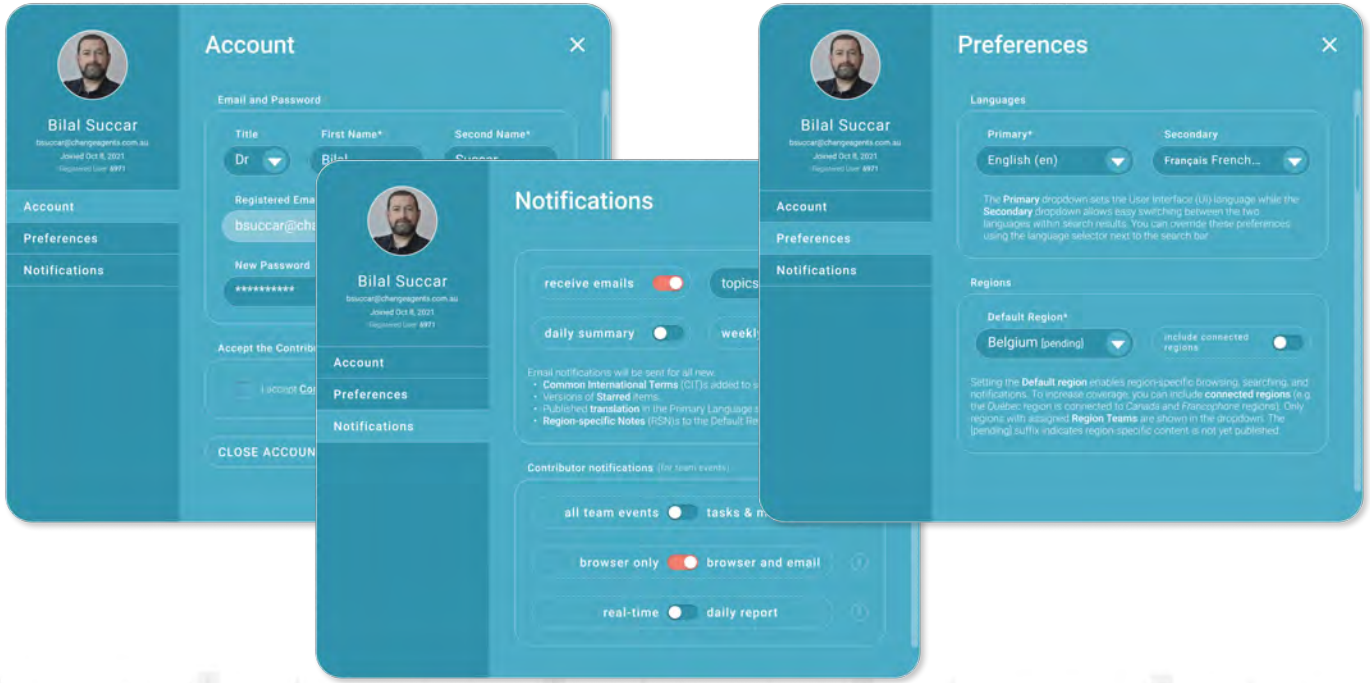
Robust and intuitive Software Solution

Editors
Co-Editors
Curators

Reviewers

in-app messenger for all teams

Robust and intuitive Software Solution



Flexible user settings

Challenge 2

Publicity + Outreach

This event is part of addressing this challenge

Challenge 2
Governance & Team Management

Governance & Team Management

Governance Model

A new Governance Model is needed. This may include a BIM Dictionary Editorial Board

Team Management Model

A new team management model is needed. This may be done by expanding the Editorial Team to add Assistant Editors (AE):

- AE for **Languages / Translations**
- AE for **Topic Curation** - content
- AE for **Regionalisation**
- AE for **Community Engagement** (internal) - onboarding, quality control, training, qualification, and follow-up.
- AE for **Outreach** - associations and universities
- AE for **Sponsorship**, **Support**, and **Special Projects**

Challenge 3
Platform development and maintenance costs

as will be covered
in Session 7

In Summary

Towards a Knowledgebase

3 Foundations

1 Contributing researchers and experts

2 Flexible and interconnected knowledge structure

3 Robust and intuitive Software Solution

3 Challenges

1 Publicity + Outreach

2 Governance + Team Management

3 Platform development and maintenance costs

Towards a Knowledgebase

If you can assist us with any of these challenges, please reach out!

3 Challenges

1 Publicity + Outreach

2 Governance + Team Management

3 Platform development and maintenance costs

Thank You!

bimdictionary.com

Dr Bilal Succar

Director, ChangeAgents AEC, Australia

Bilal is an **independent researcher** and an experienced **international consultant** in the fields of performance assessment and improvement. Dr Succar worked as a designer, site manager, trainer, and BIM specialist across the Middle East and Australia from 1992-2003. In 2004, he established **ChangeAgents AEC**, an **open-innovation consultancy** operating out of Melbourne, Australia. In 2016, Dr Succar founded the not-for-profit **BIMe Initiative**, a Community of Research and Practice aiming to accelerate the digital transformation of the built environment through process innovation and open knowledge-sharing. Balancing academic research with digital practice, Bilal published well-cited peer-reviewed articles, led high-impact national initiatives, and delivered topical keynote lectures and strategic workshops in numerous countries.

send questions after the session through the **Contact US** page

materials will be available Dec 15 on **Seminar's** page

recordings will be available on the **BIMei Channel**

Session 7

Supporting the BIMe Initiative

The session will explain the BIMei Support Packages and highlight how the community can partner with research-minded organisations to generate and share digital transformation knowledge

Marie Grieve

Founder and Managing Director at Costello Palmer Communications, UK

Marie has 20 years' experience of working in **marketing** and **business development** and in 2015 Marie founded **Costello Palmer Communications**, a marketing and communications consultancy specialising in digital content and high-performance strategic delivery for a global client base. Having worked with both public and private sector organisations, local and central governments, Marie is an expert **marketing strategist**, known for delivering compelling creativity, whether it be content, imagery or persuasion to directly impact onto her clients' bottom line. Marie has worked with a diverse range of leading businesses and brands spanning **several sectors within the AEC industry** including; architecture, manufacturing, engineering, digital construction and with international membership bodies such as **BIMe Initiative**, **Women in BIM** (WIB), **Royal Institute of Architects** (RIBA), **American Institute of Architects** (AIA), **nima** and **buildingSMART International**.

Supporting the BIMe Initiative

Marie Grieve

Managing Director, Costello Palmer Communications

BIM e INITIATIVE

WE CULTIVATE THE BIM COMMUNITY THROUGH THE POWER OF RESEARCH

Welcome to the BIMe Initiative

The BIMe Initiative is a not-for-profit, knowledge generating and sharing community, led by world leading researchers from both industry and academia.

With more than 160 volunteers working in teams across the globe, composed of esteemed professors, students, professionals and experienced educators from across 40+ countries.

We provide a community-based, research-driven alternative to top-down, authority-led, and prescriptive BIM diffusion policies.

Supported by clear knowledge structures, our network of international subject matter experts deliver tools and resources that facilitate the adoption of digital transformation practices across the built environment.

General Principles

The BIMe Initiative is built upon a set of key principles:

1. Commitment to Openness

2. Grown around a Knowledge Structure

3. Peer-sourced and Peer-tested

4. Open Innovation across boundaries

There is power in numbers

Turn our research into a profitable return for your products and services. Partnership with BIMe Initiative gives you access to the very people you want to do business with.

Our research is translated into 27 languages

The BIMe Initiative Community spans 40+ countries

More than 160 pioneering researchers across the globe

6,200 followers on social media

34.000+ new users on bimexcellence.org per year

Connecting with the BIMe Initiative Community

What it means to be a BIMe Initiative Supporter

We drive engagement and action within the digital communities that shape the built environment across the world.

Becoming a Supporter of the BIMe Initiative offers significant opportunity to become a part of a transformative process that is impacting on the way we design, build and manage our built assets across the globe.

Supporter Packages

Package 1

Corporate Supporter

This Corporate Supporter package covers all projects and resources generated by the BIMe Initiative.

It offers recognition of the Supporter through a wide variety of activities and communication engagement.

The BIMe Initiative Corporate Supporter package is perfectly suited for organizations wishing to improve their brand recognition as leaders in the digital transformation space.

Package 2

Excellence Seminar Supporter

The BIMe Initiative Excellence Seminar is held virtually once a year with international participation from industry and academia.

The event is widely publicised and attracts a large, global audience interested in digital transformation and the latest research from the 160+ BIMe Initiative researchers.

The BIMe Initiative Excellence Seminar Supporter package is most suited for organisations who wish to place their products and services in front of Seminar attendees of highly informed practitioners and organisational leaders across the globe.

Package 3

Research Theme Supporter

The BIMe Initiative Research Theme Supporter package provides an opportunity to support the development of BIMe Initiative resources and tools for a priority research theme.

The theme is then transformed into a micro project with clear deliverables, research team and delivery schedule.

This package is most suited for organisations who are seeking to research a topic – underserved by academic researchers – and is of high relevance to their R&D business interests.

Package 4

Bespoke Research Supporter

The Bespoke Research Supporter enables you to work with us exclusively on a topic of research you select to benefit your business goals and meet the needs of change demanded from industry.

Become known as an influential future-thinker by delivering a customized program built upon proven frameworks for strategy, leadership and innovation.

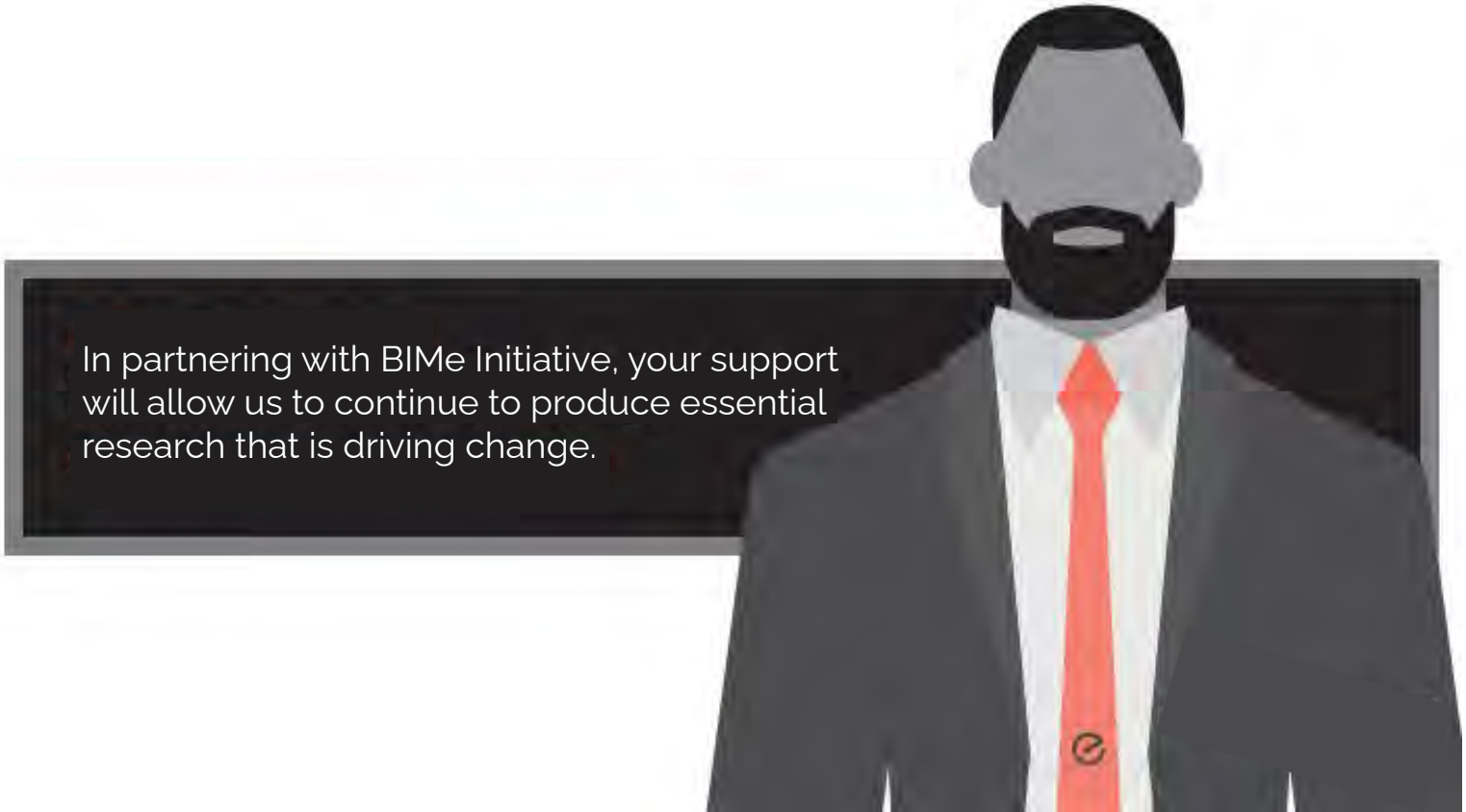
The Bespoke Supporter package is most suited for organisations who wish to make a difference and positively impact the future digital transformation of global construction.

Supporter Benefits

As a BIMe Initiative Supporter you become part of our strategic plan, which will elevate your brand by:

- Positioning your products and services in front of top-ranking digital construction professionals from around the globe.
- Becoming associated with top-level research to establish your position as a thought leader within the construction industry.
- Making your brand memorable to your ideal target audience.
- Supercharge your sales efforts by attracting new potential clients and sales leads.
- Enhance your brand's visibility by leveraging BIMe Initiatives contacts and global reach.

BIMe INITIATIVE



BIMe INITIATIVE

AMPLIFY YOUR GLOBAL DIGITAL VOICE THROUGH BIMe INITIATIVE

email: supporters@bimexcellence.org


BIM e
INITIATIVE
SCREEN SHARING TIME!

Session 8

ISO 19650 - Vulgarisation App

This session will introduce the Vulgarisation App, an interactive resource intended to help practitioners understand ISO 19650 principles, components, and their relations

Dimitri Daniaud

Standards Manager at BIM&CO, France

Dimitri is a **building and urban engineer** based in Paris. He first worked for a **professional organization representing the interests of small construction companies** on the technical and digital aspects and in particular BIM. He was called upon to represent them and participate at the French level for the successive digitalization plans of the sector and at the level of the European and international normative bodies that are the **CEN technical committee 442** and **ISO TC 59 SC 13**. These experiences have enabled him to acquire a global view of the construction sector and its challenges, and in particular those associated with the **management of information for small structures**. He has since worked for the software publisher **BIM&CO**, for which he holds the position of **standards manager** and is **responsible for compliance** with current standards and data quality assurance.

Introduction & background

Dimitri Daniaud

📍

Currently Standards Manager @ BIM&CO

- Ensuring compliance
- Providing expertise
- Guaranteeing data quality, confidence and legitimity

BIM&CO provides an information management solution for manufacturers and construction value chain especially through dictionaries *(as well!)*

⏪

Formerly representative for french construction craftsman companies (la CAPEB)

- BIM standardization committees ISO CEN → hello ISO 19650 serie📝!
- French BIM transition Plan PLANBIM 2022 → this is here the app was born 🐣

Wait what ? Sleepy moment alert

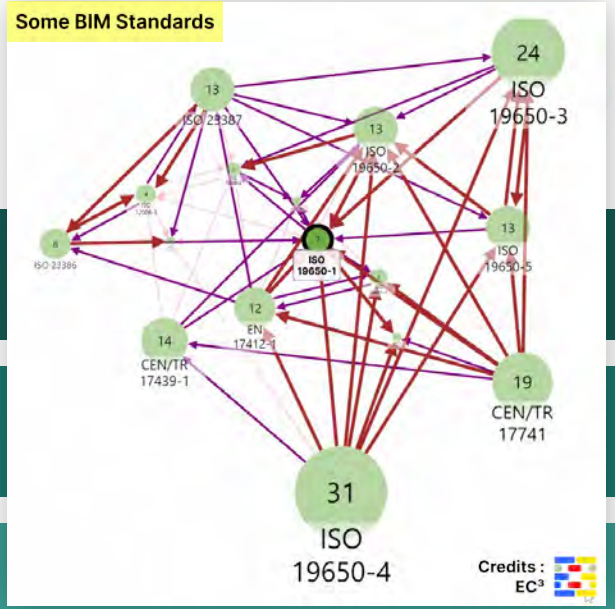
Standardization — Sharing commons

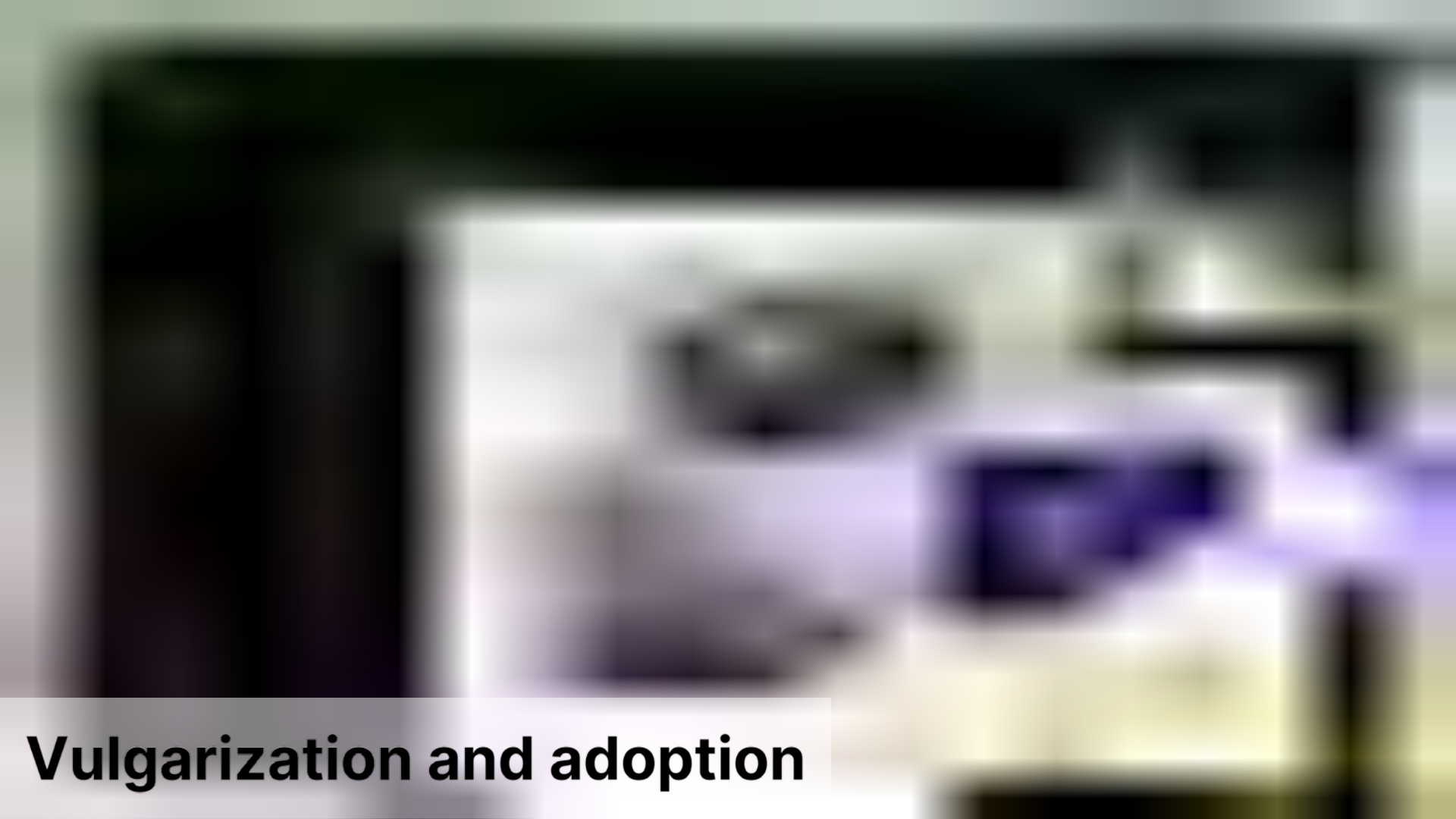
BIM Standards — You said BIM right??

ISO 19650 — **Information management ?**

Vulgarisation — **Whoa ! Interesting !!!**

The need for





Vulgarization and adoption

The app

Scope : the content

- Based on 19650 part 1 & 2 and related standards
- French usages and interpretations
- Mapping of concepts

Challenges

- Content
- Form

The app is :

- **A first version**
- **Not perfect**

Live demo ⚡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SCREEN SHARING TIME!

Thank you for your attention!

The app

More about BIM Standards :

CEN Webinar

BIM Standards Landscape Dashboard

BIM Standards Adoption

Special thanks to :

EC3 Modelling & Standards Committee

Dr Bilal Succar, Ms **Marie-Claire Coin,** the **editorial committee**, the **plan BIM 2022, AFNOR** for their commitments to this project.


MINISTÈRE CHARGÉ DU LOGEMENT
Plan
Pourquoi ?
Comment ?
Quoi ?
En Pratique
En France
Index
PLANBIM 2022
Un corpus de normes accompagne le développement du BIM dans les opérations qui nous sont confiés. L'application propose un parcours afin d'éclairer et d'expliquer ces normes.
L'application a pour objectif de simplifier l'appropriation de ces normes BIM dans nos opérations, et en particluier des deux premières parties des normes NF EN ISO 19650 au travers d'un parcours qui s'articule autour de 5 grande thématiques représenté ci-dessous
A lire avant de parcourir l'application
Je veux gérer l'information dans le cadre d'un processus BIM
POURQUOI ?
COMMENT ?
CONVENTION BIM
QUOI ?
...et je veux appliquer la norme :

Session 9

Bridging the Digital Transformation Gap

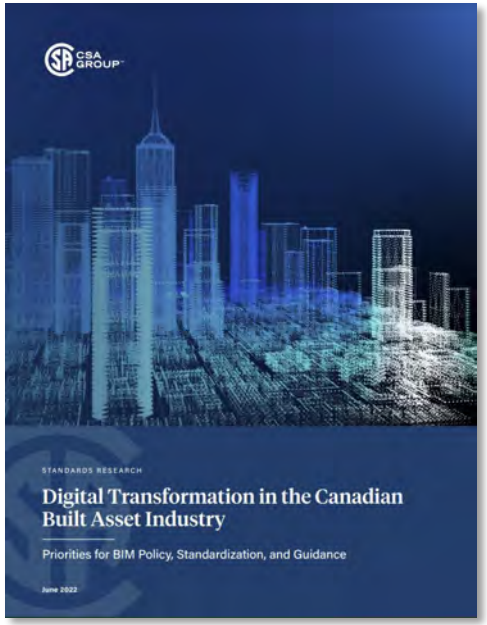
An exploration of how BIMe Initiative concepts and materials are used to facilitate integrated Digital Transformation across a market - Case Study from Canada

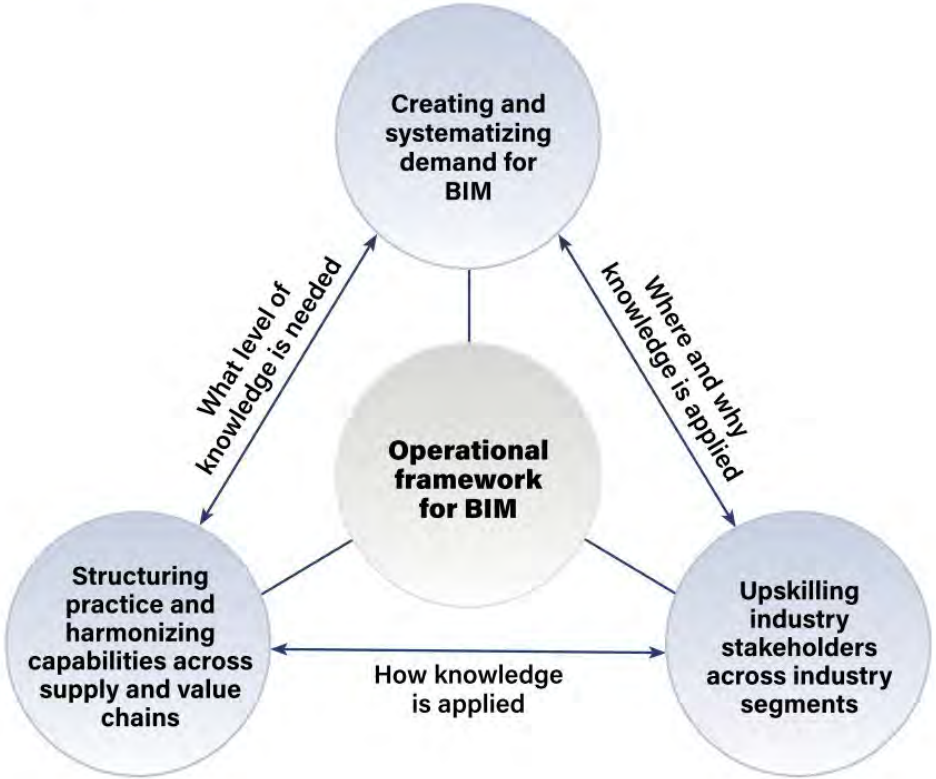
AProf Erik Poirier

École de technologie supérieure, Canada

Erik is a professor in the **Department of Construction Engineering** at the École de Technologie Supérieure and co-director of the **Groupe de recherche en intégration et développement durable en environnement bâti** (GRIDD). He specializes in the integration and optimization of information flows within value chains in the built asset industry. Erik serves as Vice-Chair of the **Quebec BIM Group**, is a member of the Board of Directors of **buildingSMART Canada** and is the Mirror Committee Director of the Standards Council of Canada for **ISO Technical Committee 59** - **Technical Committee 13** (ISO TC59-SC13). He holds a Ph.D. and M.Sc. in Construction Engineering from École de Technologie Supérieure and a B.Sc. in Architecture from Université Laval. He also completed a postdoctoral fellowship at the University of British Columbia.

Positionning the BIMe initiative





Poirier et al. 2022

Macro BIM Adoption - Québec

I Q C 4.0 INITIATIVE QUÉBÉCOISE POUR LA CONSTRUCTION 4.0

BIM Québec | POUR UN ENVIRONNEMENT BÂTI NUMÉRIQUE AU QUÉBEC

in collaboration with / en collaboration avec: ÉTS

This Macro BIM Adoption Study – Québec is conducted in collaboration with **Groupe BIM du Quebec** (GBQ) and **École de Technologie Supérieure** (ETS) in the context of the Quebec Construction 4.0 Initiative.

The survey is available in both **English** and **French** (please select language from the drop-menu at the top-right of the embedded survey below). Data collection started on **December 10** and will conclude on **January 30, 2019**.

Participation is by invitation only; interested parties can request an invitation by contacting the study leaders: Dr. *Erik Poirier* (GBQ) and Prof. *Daniel Forgues* (ETS).

Cette Étude d'adoption BIM Macro - Québec est réalisée en collaboration avec le **Groupe BIM du Québec** (GBQ) et l'**École de Technologie Supérieure** (ETS) dans le cadre de l'Initiative Québécoise de la Construction 4.0.

Le sondage est disponible en **anglais** et en **français** (veuillez sélectionner une langue dans le menu déroulant en haut à droite du sondage intégré ci-dessous). La collecte des données a débuté le **10 décembre** et se terminera le **30 janvier 2019**.

La participation est sur invitation seulement; les parties intéressées peuvent demander une invitation en contactant les responsables de l'étude: *Erik Poirier* (GBQ) et *Daniel Forgues* (ETS).

Positionning the BIMe initiative : the Quebec model of BIM diffusion

Société québécoise des infrastructures Québec

Transports Québec

Société d'habitation Québec

Hydro Québec

Ville de Québec

Ville de Montréal

BIMe INITIATIVE

580

Diagnostics and action plans delivered or in progress

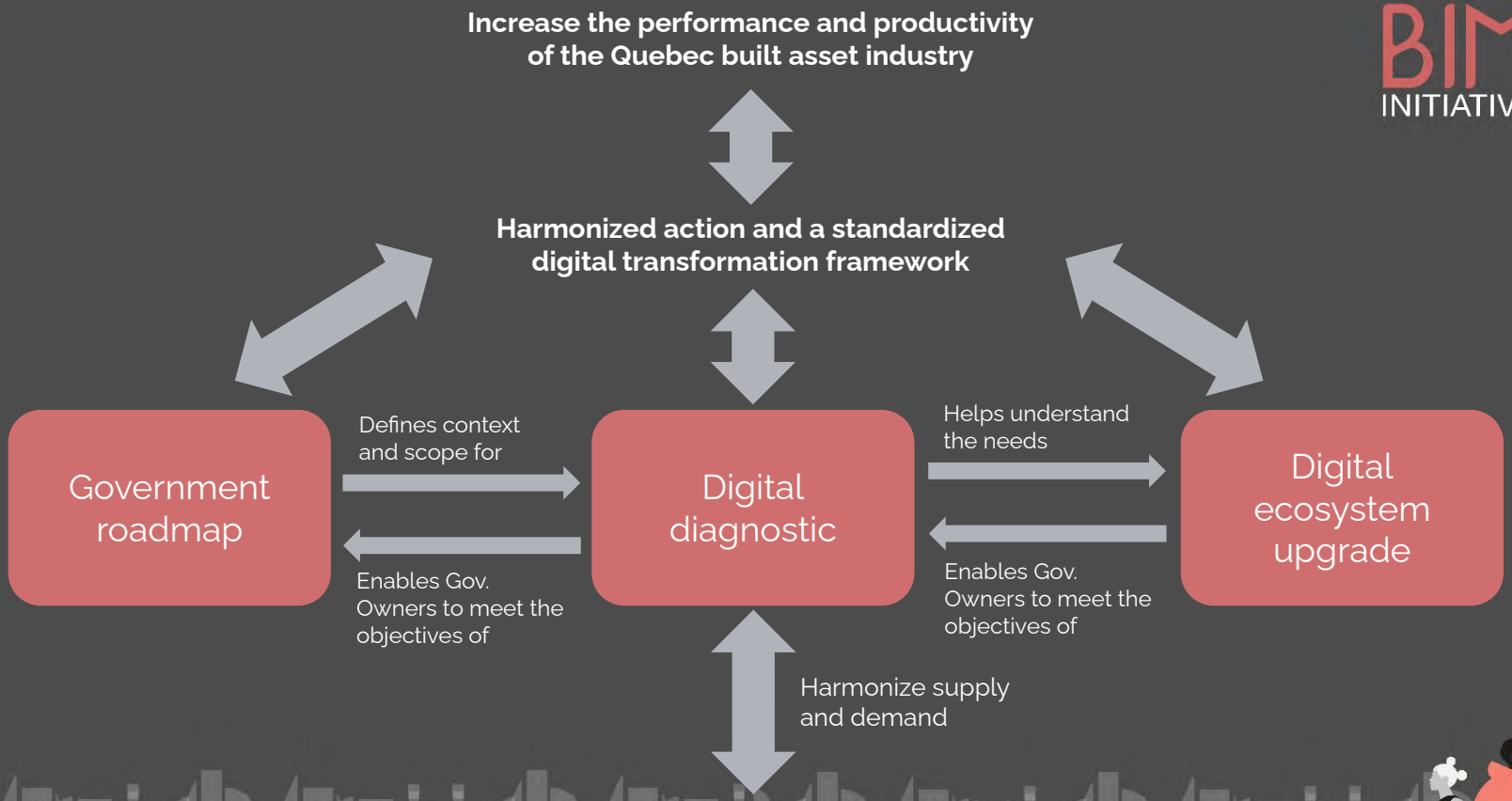
885

Total diagnostics and action plans to be delivered

BIMe INITIATIVE

IQC 4.0 INITIATIVE QUÉBÉCOISE POUR LA CONSTRUCTION 4.0

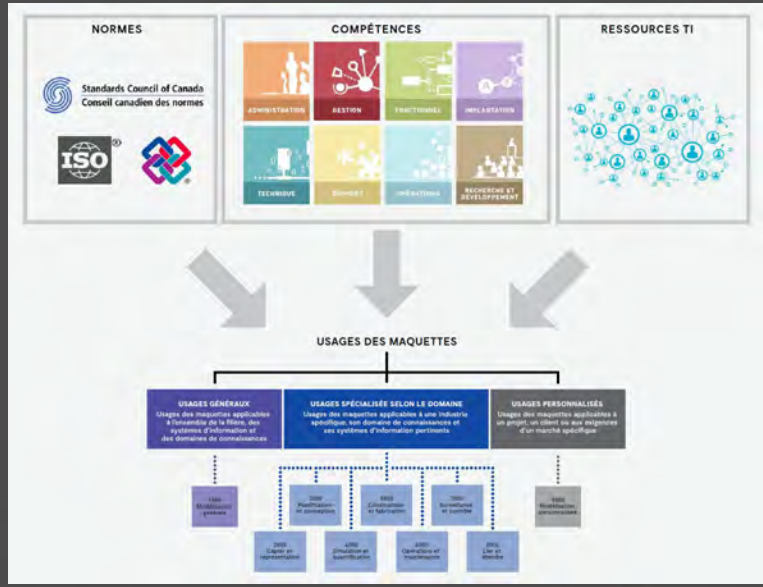
BIM Québec | POUR UN ENVIRONNEMENT BÂTI NUMÉRIQUE AU QUÉBEC | Institut de gouvernance numérique | Québec


Increase the performance and productivity of the Quebec built asset industry
Harmonized action and a standardized digital transformation framework
Government roadmap
Defines context and scope for
Enables Gov. Owners to meet the objectives of
Digital diagnostic
Helps understand the needs
Enables Gov. Owners to meet the objectives of
Digital ecosystem upgrade
Harmonize supply and demand

Harmonize supply and demand

IQC 4.0 INITIATIVE QUÉBÉCOISE POUR LA CONSTRUCTION 4.0

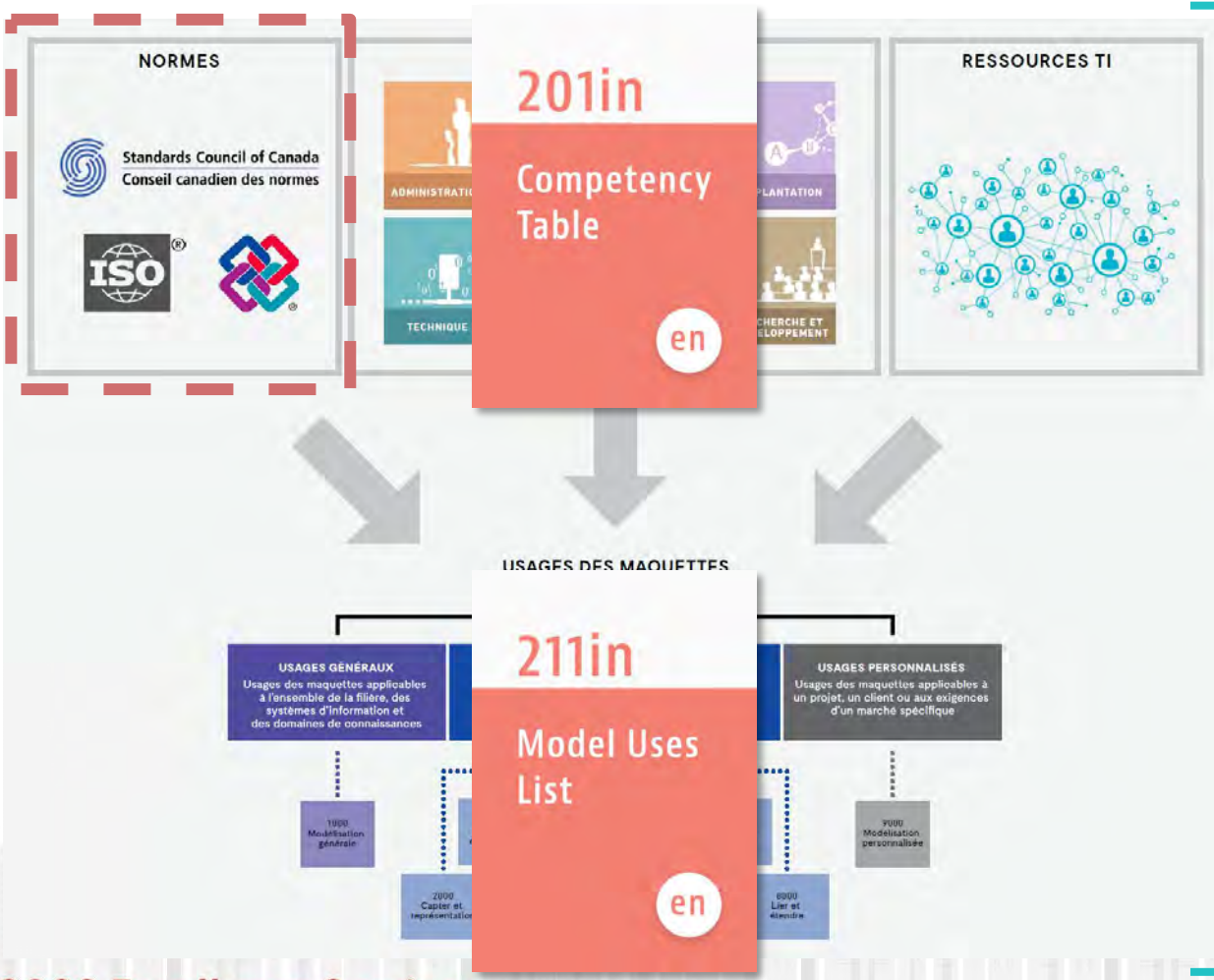
BIMe INITIATIVE



BIMe INITIATIVE

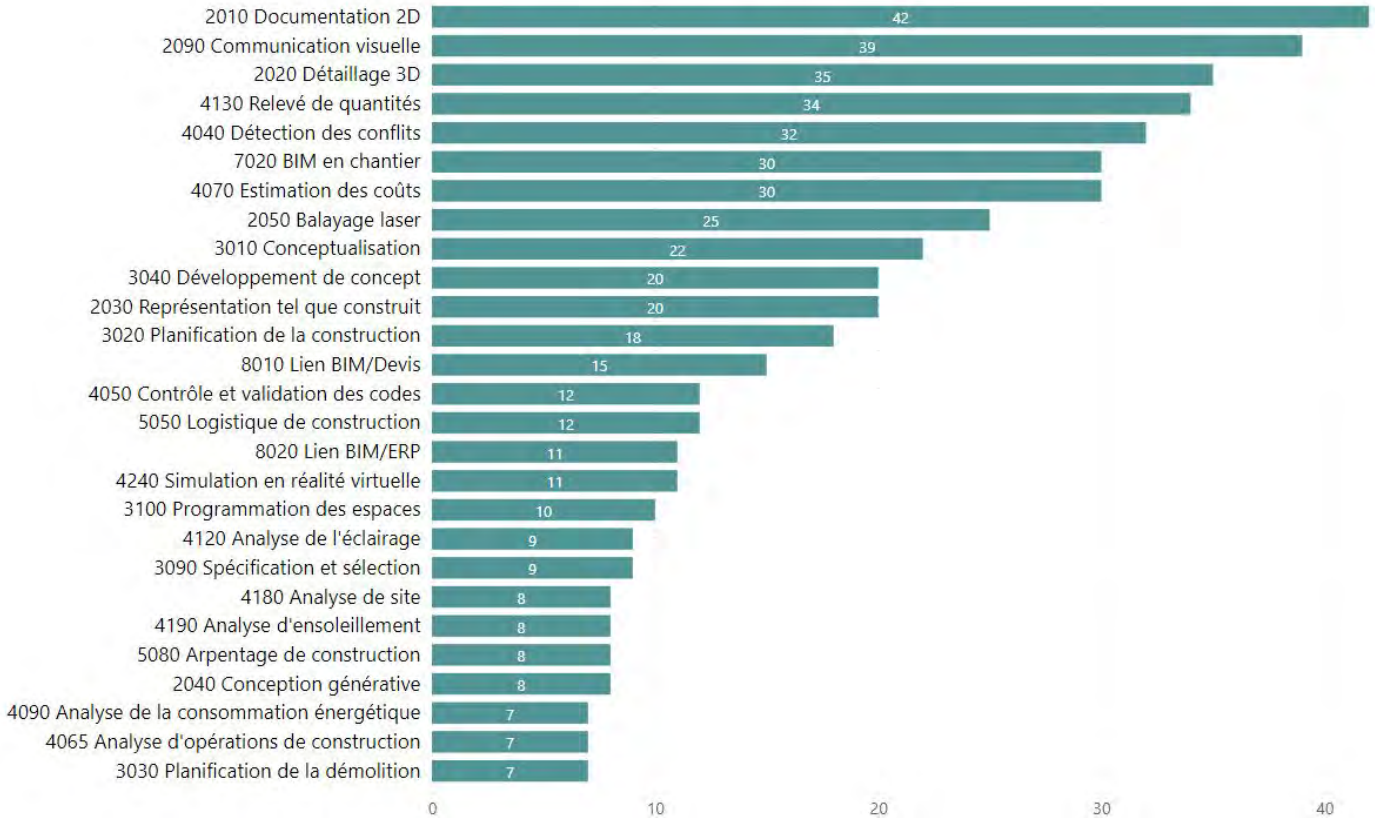
Harmonize supply and demand through:

- Common language = **BIM dictionary**
- Aligned skills and competencies = **BIMe competency table**
- Common concepts and applications = **BIMe Model uses**
- Shared processes and terminology = **Standards**



BIMe INITIATIVE

BIM Dictionary
common language, shared goals


2010 Documentation 2D
42
2090 Communication visuelle
39
2020 Détaillage 3D
35
4130 Relevé de quantités
34
4040 Détection des conflits
32
7020 BIM en chantier
30
4070 Estimation des coûts
30
2050 Balayage laser
25
3010 Conceptualisation
22
3040 Développement de concept
20
2030 Représentation tel que construit
20
3020 Planification de la construction
18
8010 Lien BIM/Devis
15
4050 Contrôle et validation des codes
12
5050 Logistique de construction
12
8020 Lien BIM/ERP
11
4240 Simulation en réalité virtuelle
11
3100 Programmation des espaces
10
4120 Analyse de l'éclairage
9
3090 Spécification et sélection
9
4180 Analyse de site
8
4190 Analyse d'ensoleillement
8
5080 Arpentage de construction
8
2040 Conception générative
8
4090 Analyse de la consommation énergétique
7
4065 Analyse d'opérations de construction
7
3030 Planification de la démolition
7
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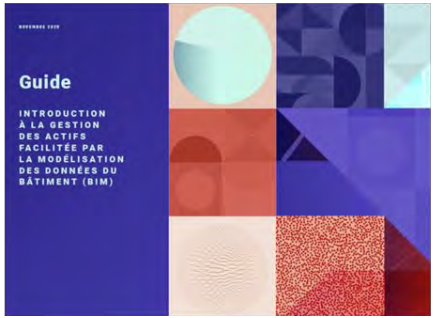
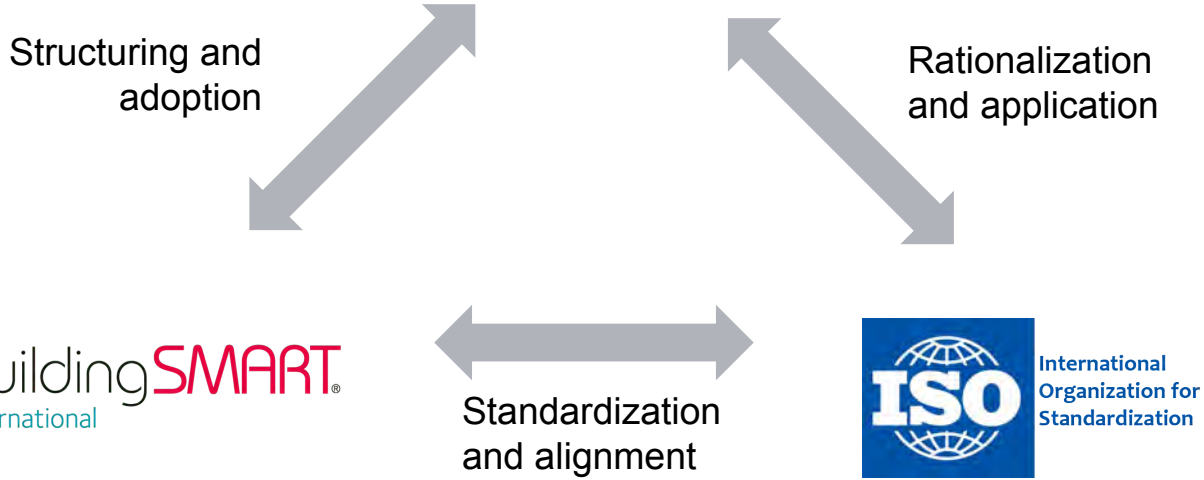


BIMe INITIATIVE

BIMe INITIATIVE



QUESTIONS?


BIM e
INITIATIVE
SCREEN SHARING TIME!

Day 2 summary

Call to Action Recap

BIMe INITIATIVE

Session 2	Regional Representatives needed
Session 4	MUT Leaders needed
Session 5	Language Editors needed
Session 6	Topic Curators needed
Overall	Supporters needed

Thank You

share your thoughts on social media

#ExcellenceSeminar