

A blurred, purple-tinted photograph of a crowd of people walking in a large, open space, likely a convention hall or airport terminal. The people are out of focus, creating a sense of movement and a busy atmosphere. The overall color palette is a monochromatic purple.

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Gathering23

Accelerating BIM adoption

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KEYNOTE SPEAKER

Carolina Soto
Planbim Chile

BIM adoption in public projects in Chile:

Strategies and collaboration for the digital transformation of the Construction industry

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Carolina Soto
Executive Director Planbim Corfo

CITA BIM Gathering, Ireland
September 19th, 2023

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

Planbim Strategy

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1

Objective of BIM implementation in the State

Increasing the productivity and
sustainability of the construction industry

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State

Methodology
transfer



Academy

Support to Academic
Institutions

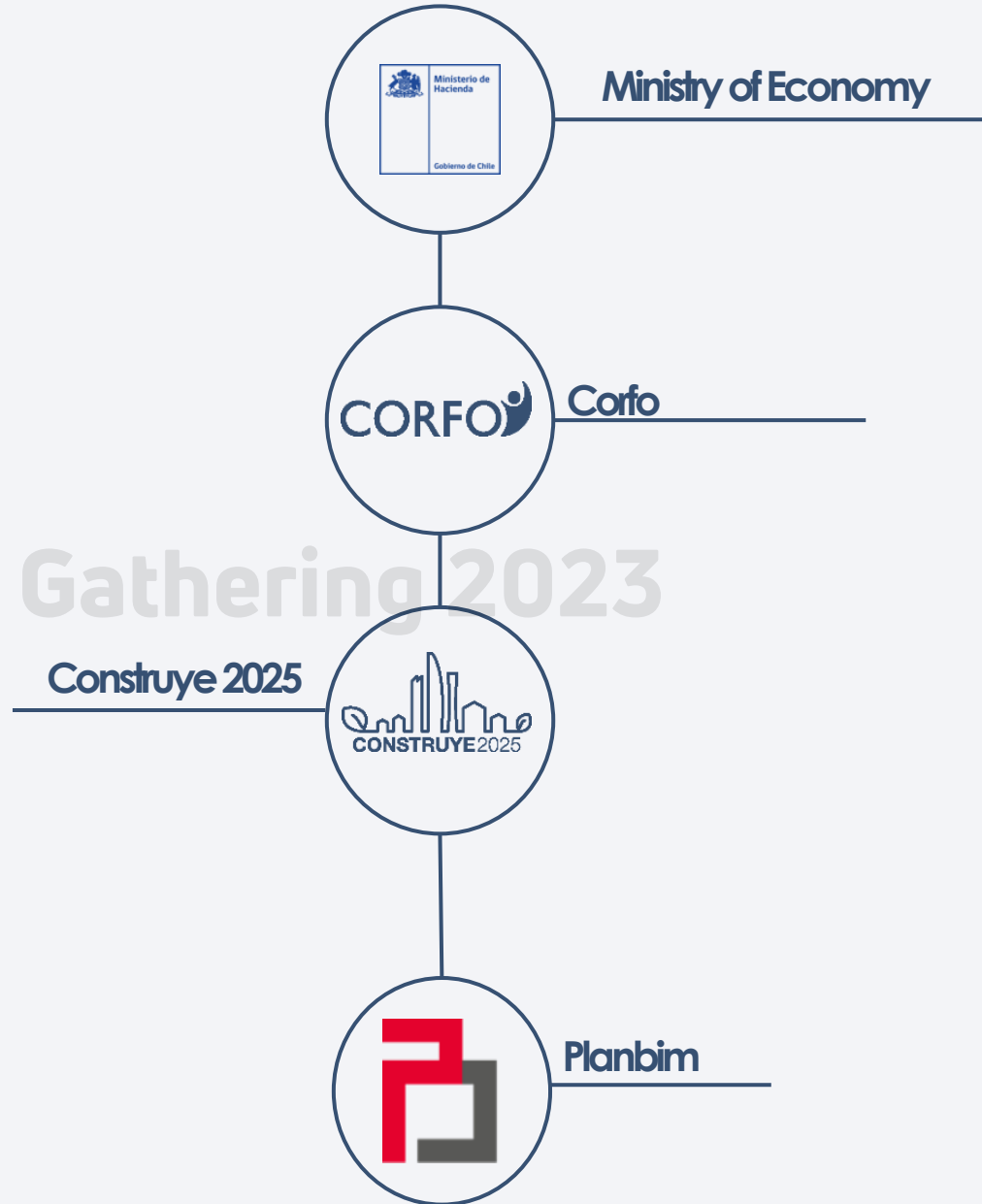


Private

Support for Companies

Planbim Institutionality

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Participant Organizations

18 Institutions

January 2016

Corfo

Ministerio de Economía

Ministerio de Vivienda y Urbanismo

Ministerio de Obras Públicas

Ministerio de Hacienda

Cámara de la Construcción (priv.)

Instituto de la Construcción (priv.)

2017 - 2018

CA Poder Judicial

Ministerio de Educación

Ministerio de Salud

Ministerio de Desarrollo Social

Ministerio de Interior

Ministerio de Transporte

Registro Civil

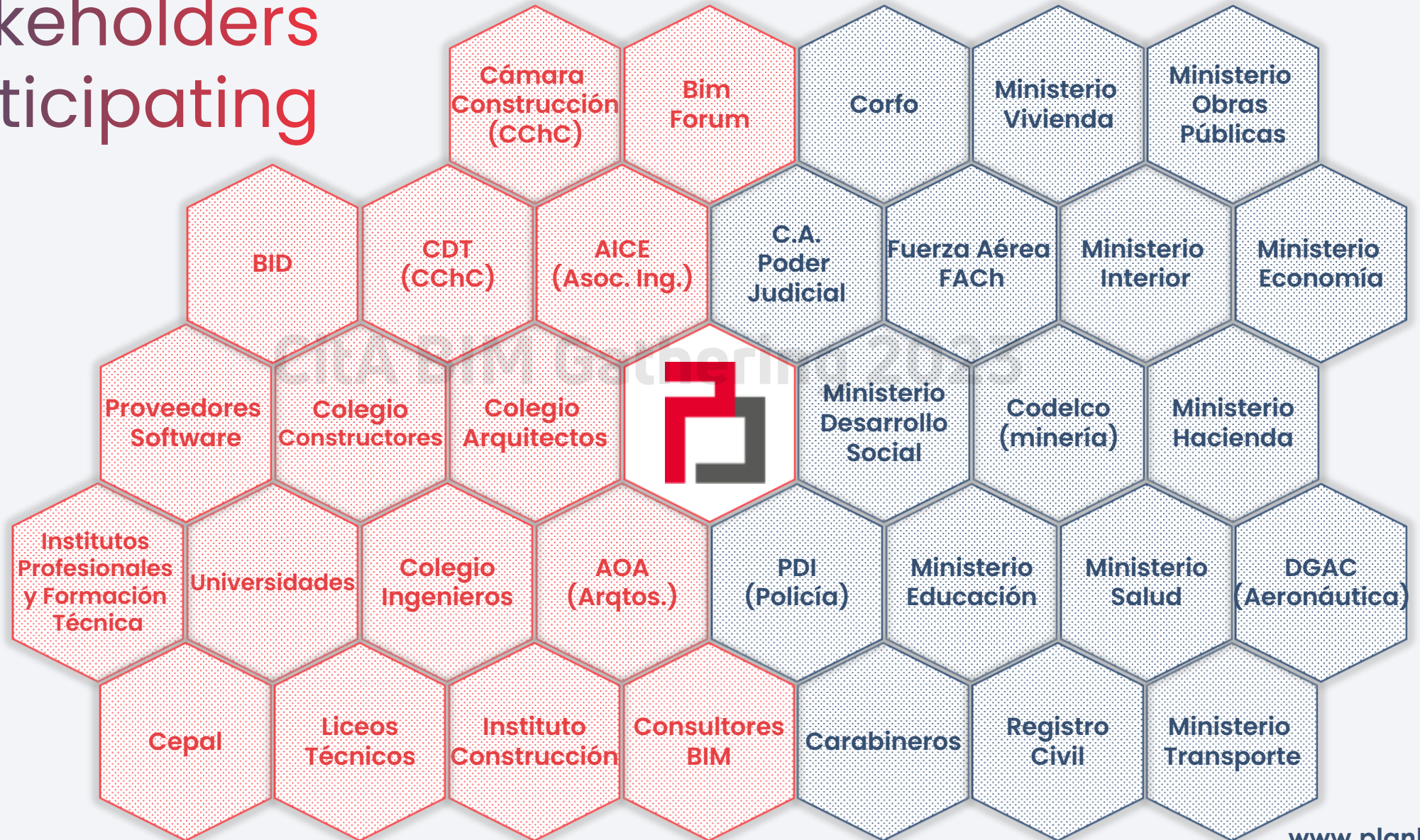
Carabineros

Policía de investigaciones

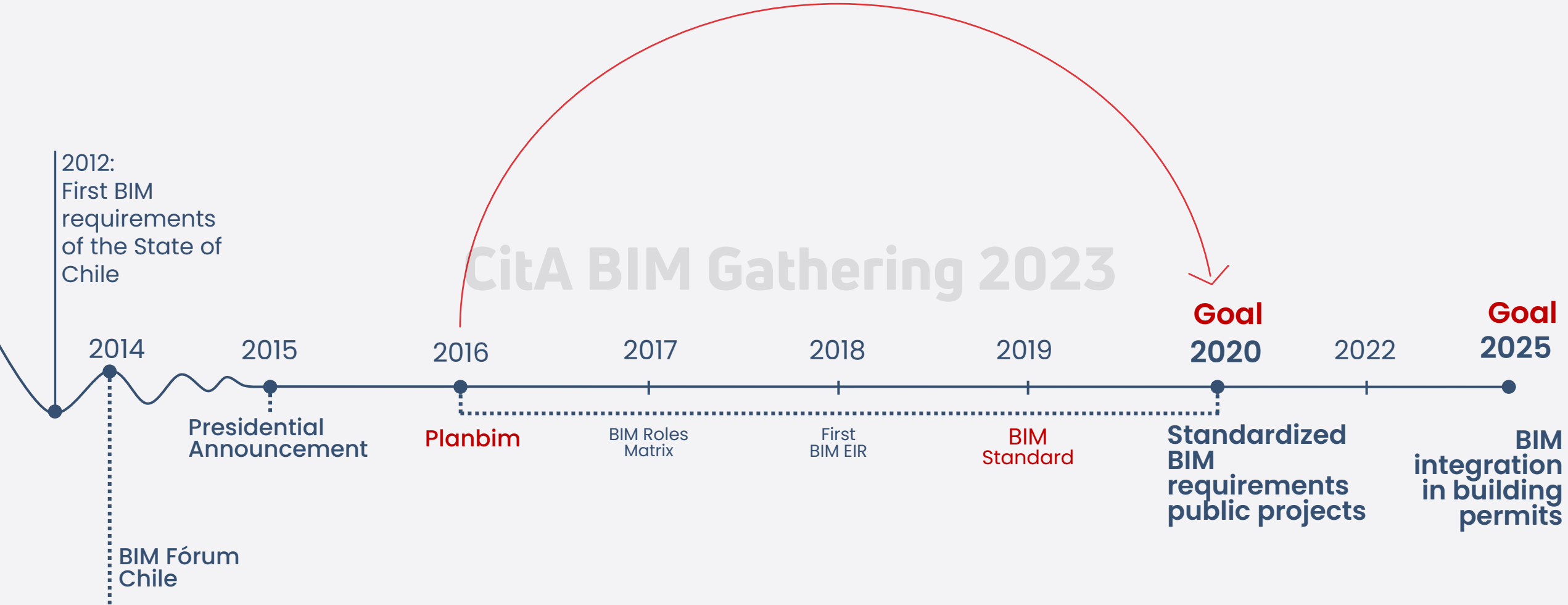
Dir. Gral. Aeronáutica Civil

Codelco

Stakeholders participating



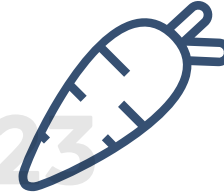
Context



Planbim: BIM State Strategy



Sets BIM goals and tracks them



Generates enablers: non-appropriable public goods, which benefit the entire industry (Standard, guides, training, dissemination, etc.)

Not enforcing BIM by decrees or laws at the beginning allowed us to control and measure the gradualness of the requirement.

Hoja de ruta 2016 - 2025

	Institutionality and Strategy
	Standardization
	Human Capital
	Enabling technologies
	Communication and engagement

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Support from the authorities

Public support of the Chilean President

Michele Bachelet

November 2015

May 2016

CitA BIM Gathering 2016



Public-private agreement Planbim, January 2016

MOP / Minvu / Ministerio de Economía
/ Ministerio de Hacienda / Corfo /
Cámara Chilena de la Construcción /
Instituto de la Construcción

Learn from international experience

- Technological missions to other countries
- Alliances and/or support from other countries or multilaterals
- Participation in networks (e.g. BIM Network of Latin American Governments, BIM Forum)
- Use of international guidelines, protocols and standards

Full-time team

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FUNDING:

-
- Ministerio de Economía
- Corfo
- Ministerio de Obras Públicas
- Ministerio de Vivienda
- Poder judicial
- Fuerza aérea
- Ministerio del Interior
- BID
- Fondo Prosperity UK



TEAM:

5 to 10 people
100% dedication

Constant collaboration and communication

- **Working Groups:**
 - BIM Standard for Public Projects
 - Mibim Maturity Matrix
 - Roles matrix
 - BIM EIRs
-
- **Communication**
 - Seminars
 - Workshops
 - Newsletter and social networks
 - Webinars

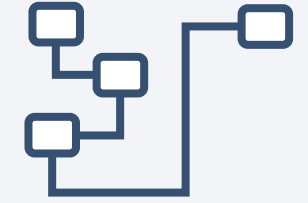


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Standardization

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2



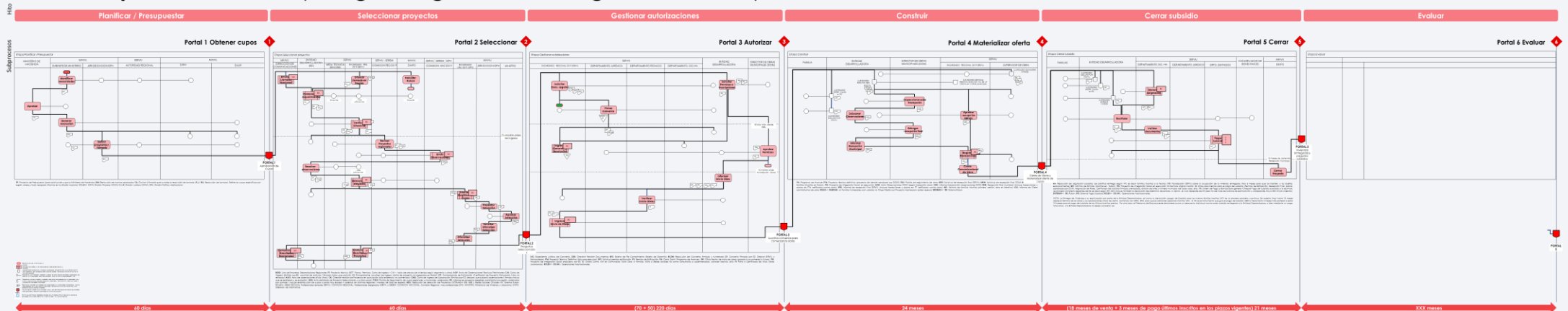
Processes standardization

Standardized Requests for Information (EIRs)

Processes Consistent with BIM

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Proceso Ejecución de la Tipología Programa de integración social y territorial DS19



BIM Standard for Public Projects 2019

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



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versions + than 41.000 downloads**

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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	
IDM BIM Basic Information Delivery Manual	BIM Basic Information Delivery Manual - version 1.0	Minimum Parameters
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	
Level of Development Specification	Level of Development Specification BIM Forum USA	NDI
Project Execution Planning Guide version 2.1	BIM Planning at Penn State	BIM Uses
US Veterans Affairs Object/Element Matrix	VA BIM Guide	TDI

Latin-American governments BIM Network

Objective:

Increasing productivity of the construction industry through digital transformation, accelerating BIM implementation national programs through collaborative work that promotes common guidelines and favors trade and knowledge exchange in the region.

8

Governments
Argentina, Brazil,
Chile, Colombia,
Costa Rica,
Mexico, Peru and
Uruguay



Guía Planbim – BID

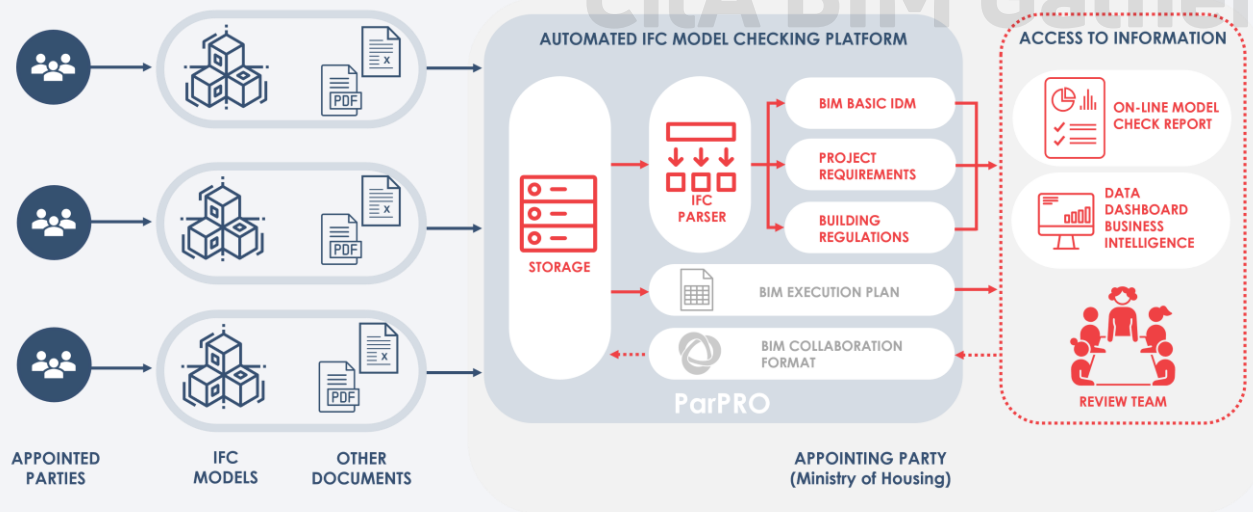
Guide for the implementation of BIM at the pilot level in public construction projects

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Download: bit.ly/44wuxuv



PARPro: Automated Project Review Platform



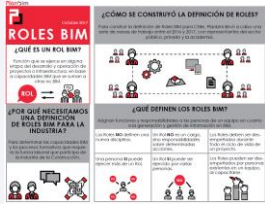
- Uses interoperable formats
- Speeds up reviews
- No need to purchase licenses
- Users don't need to know BIM
- Integrated to Ministry systems
- Proof of concept for possible future building permits system integration

Human capital actions (capacity building)

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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

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4

BIM Observatories

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BIM Observatory of public projects

2013 - 2020

1.990
tenders



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Ministry of Public Works

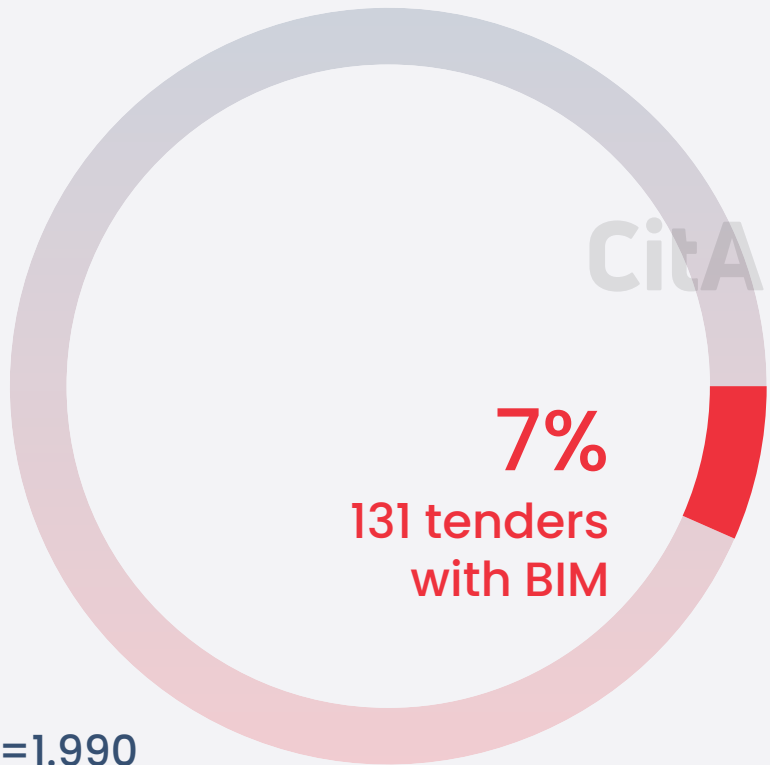
Ministry of Health

Judiciary Power

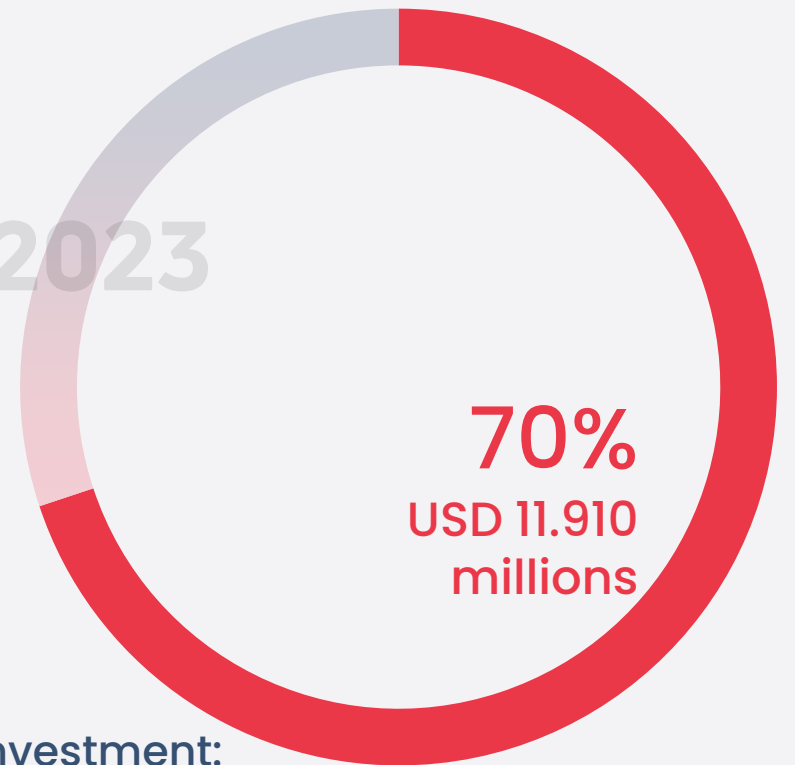
BIM Observatory of public projects

Tenders with BIM requirement

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N=1.990



Total investment:
USD 17 billion

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

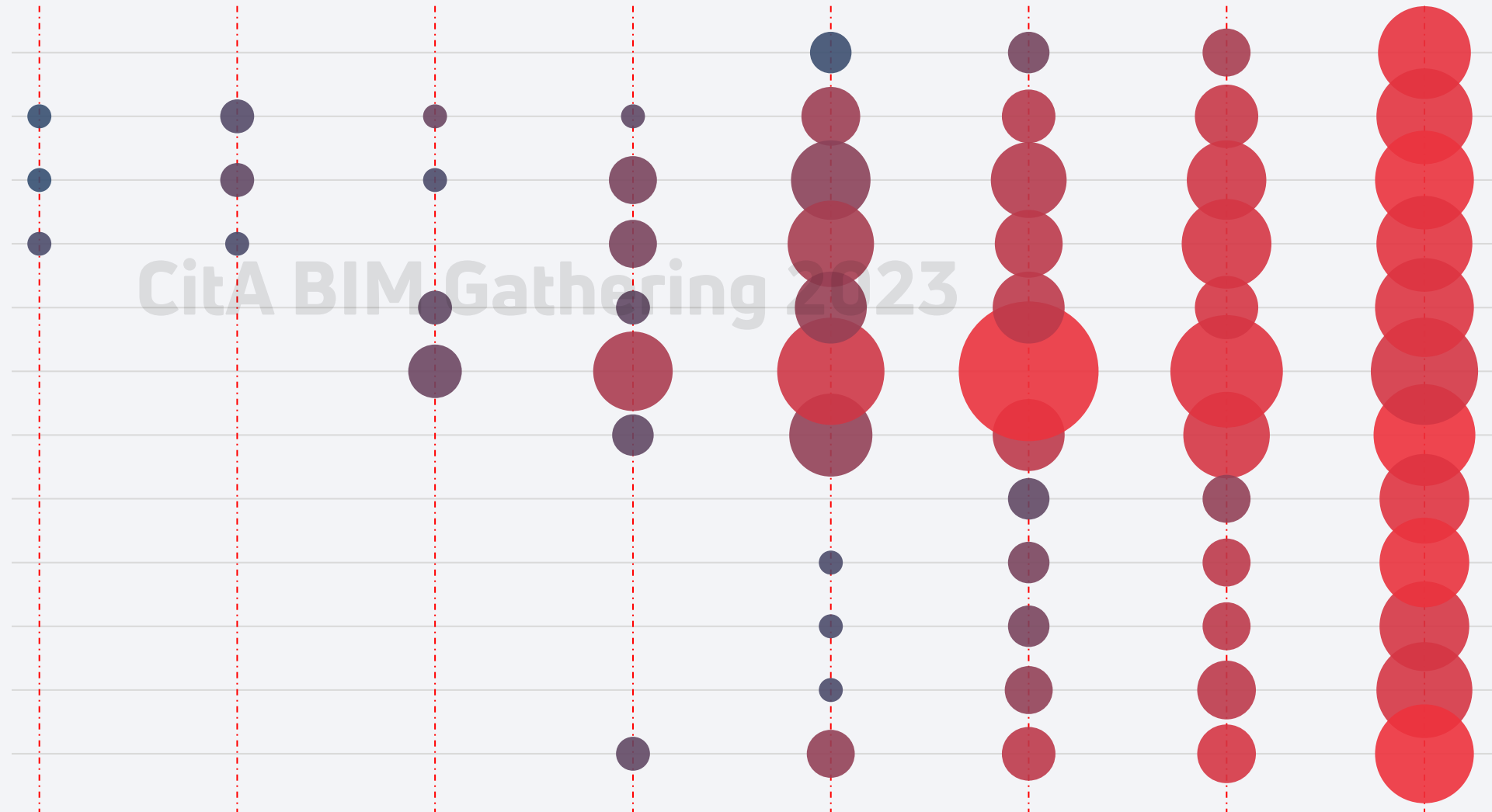
2017
N=23

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



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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

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 YouTube

A nighttime photograph of a stone bridge with multiple arches spanning a river. In the background, a large, illuminated church with a dome and two towers is visible. The scene is reflected in the calm water of the river. The sky is a deep twilight purple.

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THANK YOU