

# European Public Estate Owners

Building Information Modelling (BIM) Conference

22<sup>nd</sup> October 2013, Brussels



## Overview

This report describes the proceedings of the European Public Estate BIM Conference held in Brussels on 22<sup>nd</sup> October 2013. The purpose of the conference was to explore the opportunity for sharing common approaches and standards across the members of the European public sector.

The seminar was intended for public sector officials involved in public estate ownership, the procurement of construction/infrastructure works, or the development of policy in relation to the built environment.

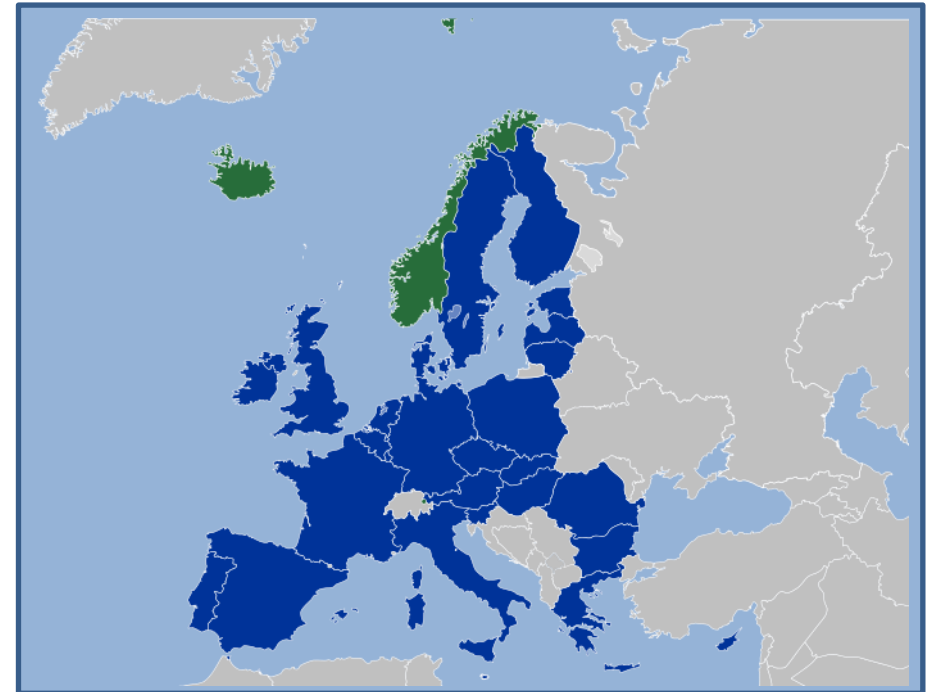
The event was co-hosted by the UK and Norway. It was designed to allow open conversation to identify shared opportunities for collaboration. The day consisted of a number of facilitated workshops which identified common goals, approaches to implementing BIM and areas of common ground for the group. These areas are summarised in this report and form the starting point for a proposed follow-up workshop to be hosted in early 2014.

To support the essential 'within country' discussions of the proposed plan and next meeting we attach the following materials;

- Speech from Mr Carlo Pettinelli's evening address of 21<sup>st</sup> October 2013
- Record of Conference proceedings (this document)
- Original workshop slides

## Report Produced by:

Mark Bew, UK BIM Task Group  
Diderik Haug, Norway Statsbygg  
Adam Matthews, UK BIM Task Group



## Outcomes

The conference participants agreed to a proposed plan for on-going collaboration, subject to the considerations of their home nation. The following steps were proposed;

- Report to EU Commission DG Enterprise, Carlo Pettinelli and team on the Group's outcomes for collaboration
- Re-convene a public sector client meeting early 2014
- Share information and best practices within the group
- Create an EU Strategy for utilising BIM for common public sector goals

## Purpose of the Conference

**BUILDING INFORMATION MODELLING (BIM)** is a process for efficiently creating and operating buildings and infrastructure which relies on a 3-dimensional computer model containing the physical, functional and associated information of the project. BIM increases transparency and access to information flowing between the suppliers and to the procurers of public works which reduces errors, resource waste and delays, thereby increasing efficiencies of constructing and operating public estate.

This working conference was intended for member states representatives that are beginning to investigate the policy, economic or sustainability benefits of BIM programmes; or for those that have started to develop or have already implemented a public sector BIM programme in its procurement of public works to share lessons learnt and identify areas of common learning

The purpose of the event was to

1. Create a common understanding of BIM and BIM programmes across the EU.
2. Build a peer-to-peer community for networking and sharing information.
3. Explore potential common goals and possible collaborative efforts to support joint developments for common approaches and standards.



## Conference Format

The format of the conference was deliberately designed to be non-technical in nature and focused on the needs of the Public Sector clients. This ensured a keen focus on the critical needs of clients to enable the operation of safe, sustainable buildings and infrastructure assets.

The agenda enabled open round-table discussions and it included opportunity for more detailed exchanges in small group facilitated workshop activities.

## Agenda

1. Introductions
2. Current Status (Where are we now?)
3. Workshop 1 – Common Goals & Benefits
4. Workshop 2 – Common Approaches and Developments
5. Sector Strategies Across Europe
6. Explore Collaboration

## Introductions

Welcome: Mark Bew

Mark welcomed everyone to the conference and outlined some of the key drivers for working together, many of which had been very clearly articulated by Monday evening's address from Carlo Pettinelli of the EU Commission DG Enterprise.

The context of the conference is the focus on encouraging innovation to drive public value and to stimulate internal market growth while maintaining open, collaborative and non-exclusive market place both in Europe and where possible across the international markets. It was reiterated that Europe has a world-class export opportunity for its design and engineering capability – and we should capitalise on this.

Welcome: Diderik Haug

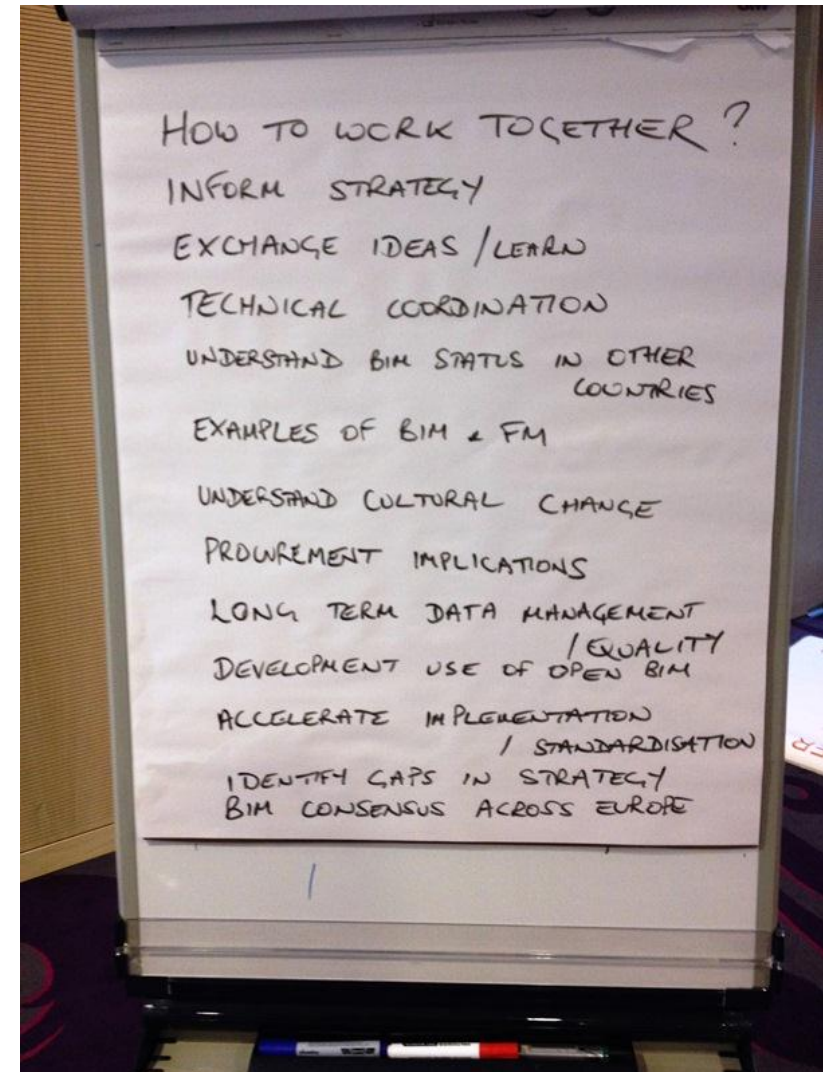
Diderik discussed how he felt we were trying to "give birth" to a European public client community for BIM. This does not compete with BuildingSMART, or any other technical body, but acts as a client. He made a request for being open and collaborative. He proposed that now is the time for clients to lead the way on BIM, and not to just follow suppliers and software vendors.



All participants (for a full list please see the appendix of this document) were then invited to share their key details and motivation for being at the conference.

The following themes in relation to BIM were identified as common across the group:

- How do we work together?
- Help to inform home strategies
- Exchange ideas and learn
- Technical coordination
- Understand BIM status in other countries
- See examples of BIM in Facilities Management / Asset Management
- Understand the cultural change
- Procurement implications
- Long term data quality and management
- Development of open standards BIM
- Accelerate implementation/standardisation
- Identify gaps in strategies for implementing BIM
- BIM consensus across Europe





## Current Status: Where are we now?

The purpose of this activity was to share the UK maturity model with the conference and use it as a model to identify where each nation thought its overall BIM maturity may lie. Clearly this activity would be partly aspirational and would reflect a very wide variety of different projects each at different stages of maturity.

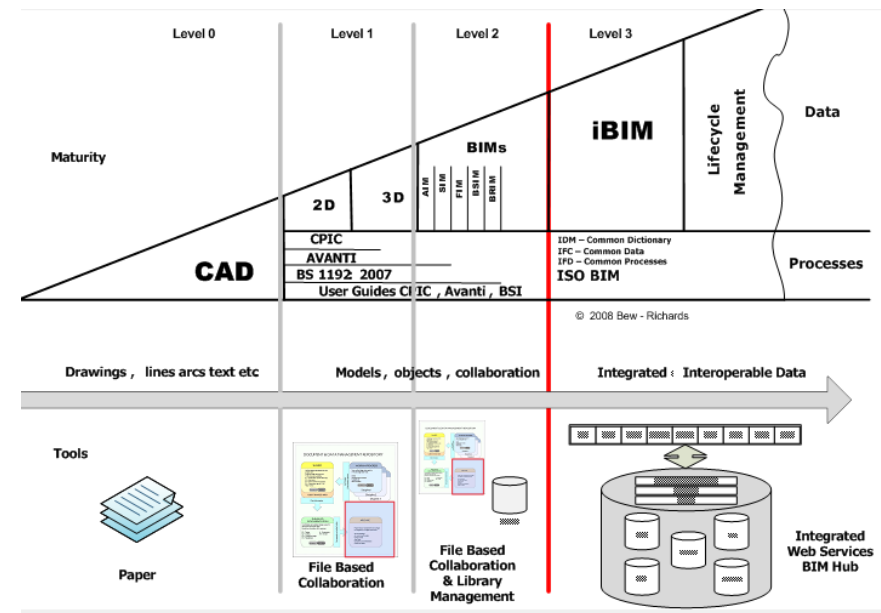
The UK maturity model (or wedge model, shown right) is fully described in the UK BIM strategy available free of charge from [www.bimtaskgroup.org](http://www.bimtaskgroup.org)

The key levels were presented and can be summarised as follows.

**Level 0:** CAD: Unmanaged CAD probably 2D, with paper (or electronic paper) as the most likely data exchange mechanism. Technology-driven, no strategy. Look immaculate so data quality (potentially wrongly) assumed. Created a lot of paper, but maybe no improvement in productivity.

**Level 1:** Managed CAD in 2 or 3D format (e.g. using BS1192:2007 or information sharing protocol) with a collaboration tool providing a common data environment, possibly some standard data structures and formats. Commercial data managed by standalone finance and cost management packages with no integration.

**Level 2:** Managed 3D environment held in separate discipline “BIM” tools with attached data. Commercial data managed by an ERP. Integration on the basis of proprietary interfaces or bespoke middleware could be regarded as “pBIM” (proprietary). The approach may utilise 4D programme data and 5D cost elements as well as feed operational systems. Level 2 is UK government policy for 2016. Discipline specific models, with attached non-graphic information. Level 2 works with currently available technology and existing contract models and current working practices. It works today without disruption to current procurement methods.



**Level 3:** Fully open process and data integration enabled by “web services” compliant with the emerging IFC / IFD standards, managed by a collaborative model server. Could be regarded as iBIM or integrated BIM potentially employing concurrent engineering processes. Fully collaborative, interoperable environment, there is no current technology support or contractual.

## Workshop 1 - Common Goals & Benefits

Following the description of the maturity ramp the conference split into two groups and discussed where each nation may be along the journey. A rich and useful conversation was held in both groups

### General Themes

Progress varies within each country; dependent on department, project, Public vs Private sector, Building vs Civils & Infrastructure, when the procurement framework was set up etc. Some countries have active strategies; others are looking to form a team to develop a strategy.

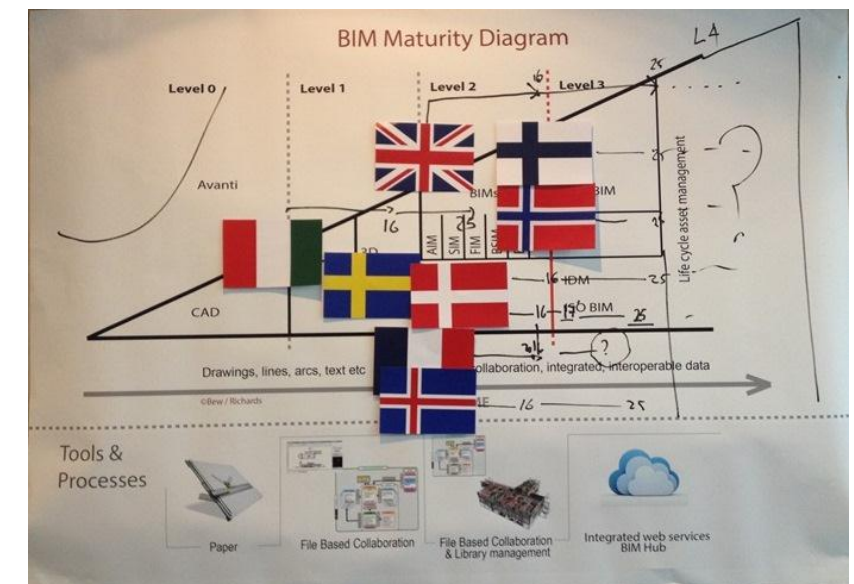
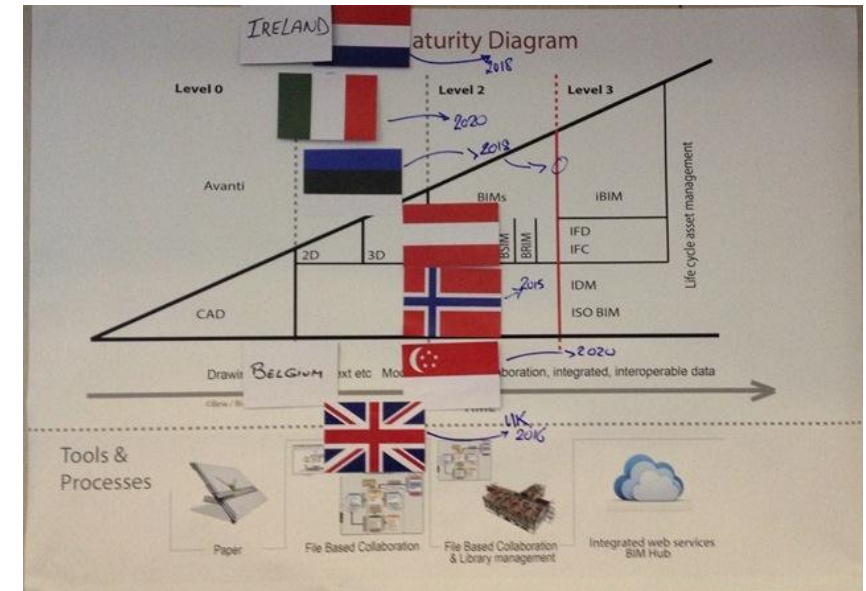
### Group 1 Summary

Strong normal distribution curve within each country, with some leading the way, and others still using paper, generally most nations clustered around level 1 moving towards 2. Recognition of the differences in maturity between BIM within Design & Construct and BIM within Operations / FM; and BIM for Buildings and BIM for Infrastructure.

One nation stated that they were aiming for level 2 by 2016-2018. Singapore are considering Level 3 activities in 2020 timeframe.

### Group 2 Summary

Flags placed on the trailing edge of the market and where delegates felt they want everyone to be. Most of Group 2 were aiming to be at Level 2 by 2016, Level 3 by 2025 and the leading edge of the industry to be heading towards level 4 post 2025.



## Workshop 2 – Common Approaches and Developments

The purpose of Workshop 2 was to;

- 1) understand where nations are in the process of adopting BIM
- 2) share the different approaches taken to implementing a BIM programme
- 3) identify if any conclusions could be made on the value of having a strategic plan

Adam Matthews introduced the BIM Programme Development model (referred to as the 'bubble' diagram), which steps through a 3-phase model for developing BIM strategies.

### Step One

Define what BIM means for the public sector client

- Public Owner learns what BIM is
- Build benefits case for BIM supporting Public Goals & high level strategy
- Public sector support for its encouragement of BIM

### Step 2

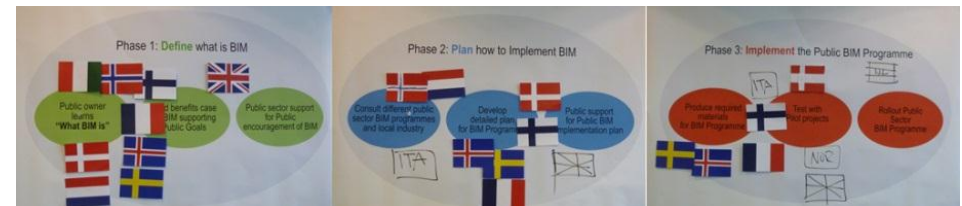
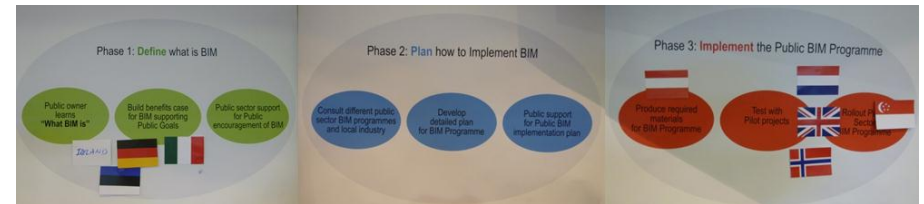
Plan how to implement BIM

- Consult different public sector BIM programmes and local industry
- Develop detailed plan for BIM programme
- Public sector support for the public BIM implementation plan

### Step 3

Implement the Public BIM Programme

- Produce required materials for BIM programme
- Test with pilot projects
- Rollout public sector BIM programme



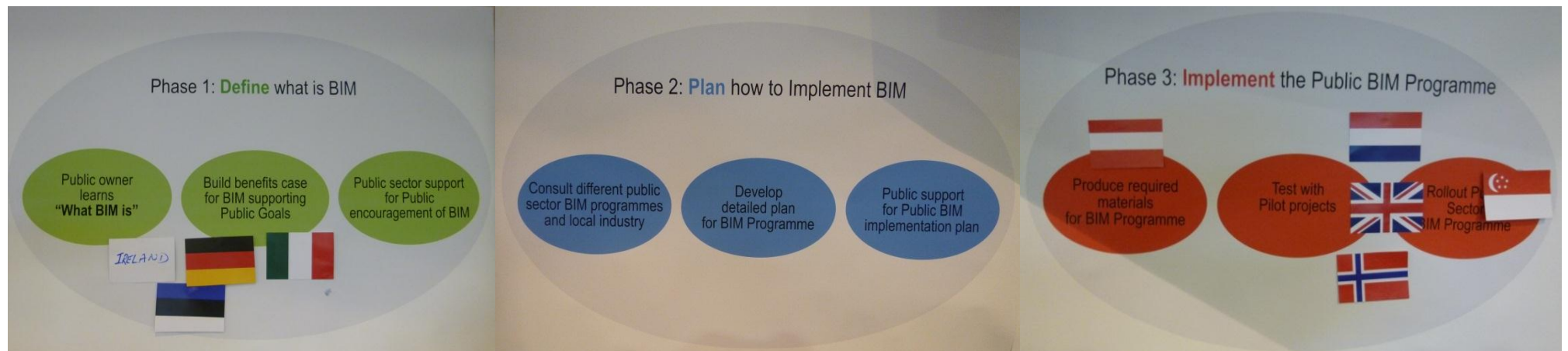
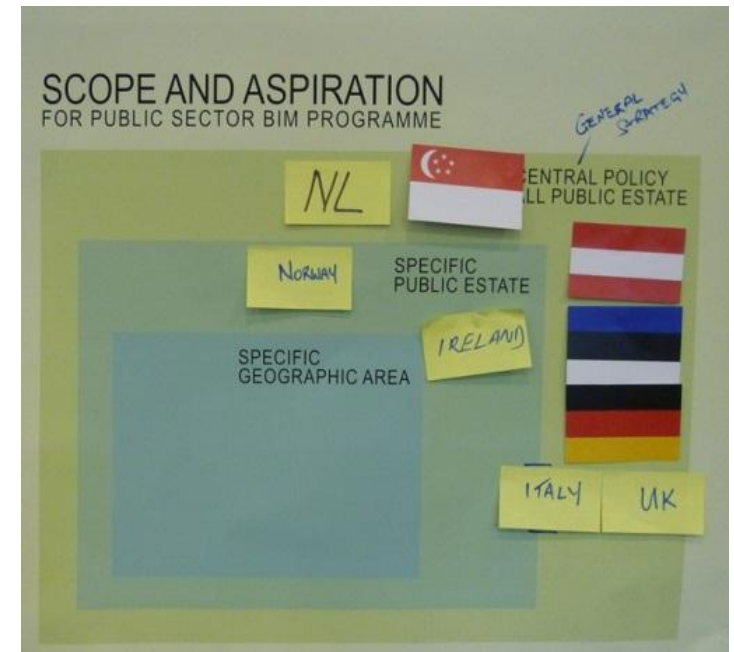


## Group 1 Summary

The group discussed the various approaches and as can be seen from the nation's locations on the process bubbles there was an interesting grouping of nations focused on Phase 1 (understanding what BIM means) and those nations who were in Phase 3 –testing BIM techniques or implementing BIM programmes in the field.

It was identified that for some representatives this was not a linear process. For example, some nations have test BIM projects and BIM programmes in place without clearly defined benefits case and public sector support.

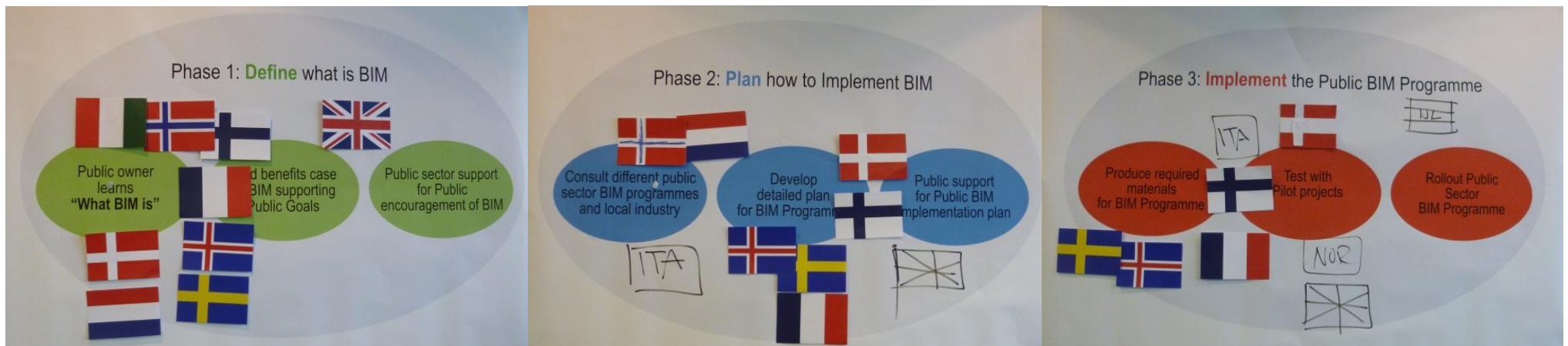
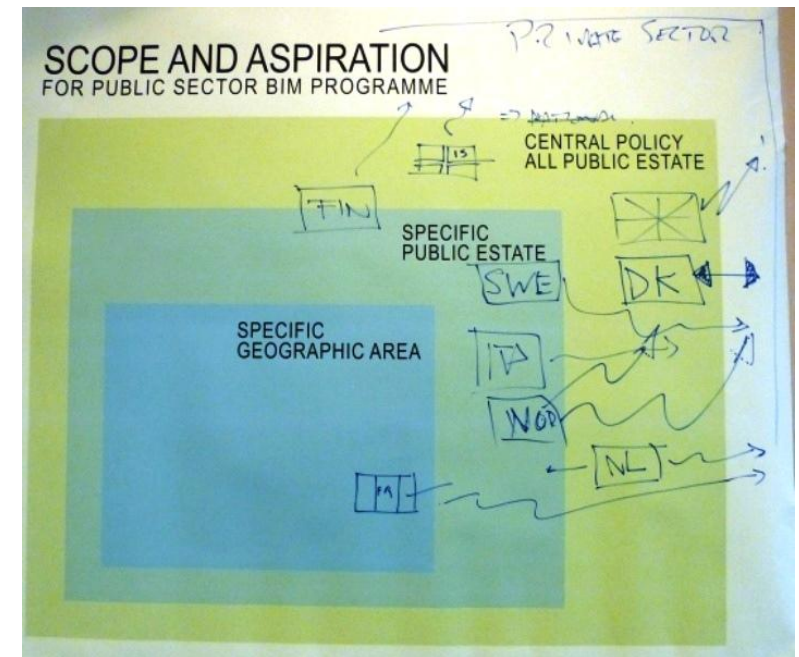
The image to the right was further work undertaken by the group to investigate where it was considered best to apply public sector mandates. Clearly most of the delegates considered this to be best done either centrally or by Public Ministry or department.



## Group 2 Summary

This group discussed the various approaches and as can be seen from the nation's locations on the process bubbles there was an interesting difference between Group 1 where at each stage each nation was at a different stage of the process. It did however become clear that the nations who had spent most time understanding the strategic drivers and market needs had progressed with their programs furthest.

The image to the right was further work undertaken by the group to investigate where it was considered best to apply public sector mandates. Once again, most of the delegates considered this to be best done either centrally or by Public Ministry or department, but in addition to the observations from group 1 it was felt that the part played by the private sector was vital to a vibrant and effective market.

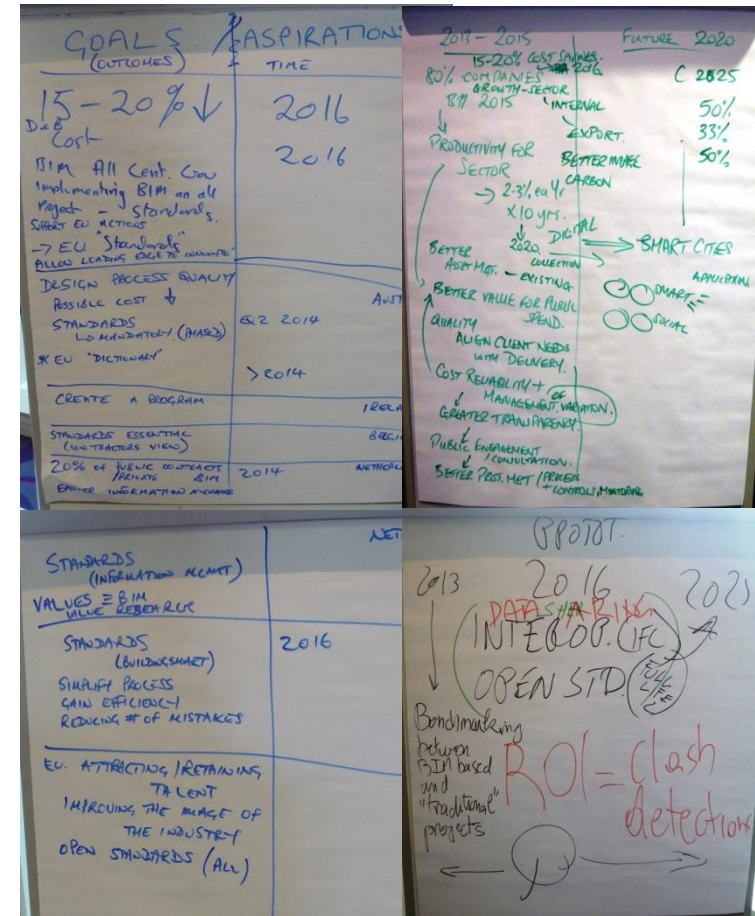


## Sector strategies across Europe

The next workshop session explored the various sector and national strategies that were in play across the conference.

The delegates split into four workshop groups and following a discussion, documented their groups key goals and aspirations that they felt would be essential to their markets to form an effective strategy.

The flip chart returns are shown to the right.





## Sector strategies across Europe - Consolidated Goals

The groups feedback and produced the following consolidated goals for the key milestones of 2016 and 2025

### 2016

- 20% savings of 2010 costs
- 2-3% year on year productivity improvement
- Quality/Value Improvements through
  - Workmanship
  - Reduced changes
  - Right design
  - Programme
  - Greater transparency
- Being Better Clients
- 20% lower CO2
- Health & Safety Improvements
- Sector Image
- Operational Strategies
- Benchmarking
- Collaboration
- Process and Project Management
- Don't constrain the leading edge
- Don't be over prescriptive
- Be inclusive (SME etc)
- EU Cohesion & Collaboration

### 2025

- 30% Cost Savings
- 50% faster delivery
- 50% lower CO2
- Diversity of industry
- Smart Cities / Smart Citizens

| GOALS                         |   | ASPIRATION |
|-------------------------------|---|------------|
| 2016                          | 2025  | 2050       |
| (2010)<br>20% CAPEX SAVING    | 30%   |            |
| PRODUCTIVITY (TGA)            | TGA   |            |
| QUALITY                       |   |            |
| → WORKMANSHIP                 |   |            |
| → CHANGES                     |   |            |
| → RIGHT DESIGN (SOFT WORKMAN) |   |            |
| → FASTER DELIVERY (20%)       |   |            |
| BE BETTER CLIENTS             | 50%   |            |
| 20% ENVIRONMENT (E.g. CO2)    | 50%   | 90%        |
| HEALTH & SAFETY DELIVERY      |   |            |
| USE                           |   |            |
| I HAVE SECTOR IMAGE           |   |            |
| HAVE A PLAN FOR OPS           |   |            |
|                               | (DIVERSITY) 25% OF TOP 5 UNIV. SMART CITIES |            |

| Goals  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• 2016</li> <li>20% saving of 2010 costs</li> <li>Productivity TBA (SG example, 2-3% YoY improvement)</li> <li>Quality / Value (doing things better)</li> <li>• Workmanship</li> <li>• Changes</li> <li>• Right Design (involving users, operators &amp; stakeholders) Alignment between client needs &amp; delivery</li> <li>• Program (20% faster delivery)</li> <li>• Greater Transparency</li> <li>Be better clients</li> <li>20% lower CO2 emissions</li> <li>Health &amp; Safety (delivery &amp; in-use)</li> <li>Improve Sector image (skills)</li> <li>Have a plan for Ops / FM (new &amp; existing assets)</li> <li>Benchmarking</li> <li>Collaboration (Open Standards &amp; Interoperability)</li> <li>Process (Project Management)</li> <li>Don't constrain the 'leading edge' innovating</li> <li>Don't be over-prescriptive</li> <li>Inclusive (e.g. SMEs, other countries)</li> <li>EU cohesion / collaboration</li> </ul> | <ul style="list-style-type: none"> <li>• 2025</li> <li>30% cost savings</li> <li>50% faster delivery</li> <li>50% lower CO2</li> <li>Diversity (x% of top 5 universities)</li> <li>Smart Cities / Smart Citizens</li> </ul> |

## Update on EU Directive

Adam Matthews gave an overview of the EU Public Procurement Directive (PPD) and the proposed reference to BIM.

In the public works section of the PPD BIM is encouraged within the wording of the e-Procurement recommendations.

**Article 19.3** Rules applicable to communications provides that: "For works contracts and design contests, Member States may require the use of specific electronic tools, such as of building information electronic modelling tools or similar"

It was discussed that this might be an area for continued collaboration for the group.



## Can we collaborate to achieve the goals?

Mark Bew thanked delegates for their participation and open involvement in the workshops.

It was clear that there was a shared challenge across the community and all nations were in a similar position, further to this it was clear that in the process of delivering public services none of the nations were in competition, but all shared a common goal of wanting to deliver better services to our citizens at a reduced cost and tax burden.

Mark chaired a debate where the following issues were discussed.

Patrick Ponthier: "Success is dependent on industry involvement / support & standardisation"

Angelo Ciribini: "Emphasis should be sharing ideas"

Peter Kompolschek: "We need to define a common dictionary / description of terms / same language"

Pietro Baratono: "Question re. Definition of 'standards'".

Patrick Ponthier response "consistent methodology"

Mark Bew: "return the conversation to the public client view" "What do we need and can we collaborate to achieve it?"

Diderik Haug: "if we can agree on this language and find common points of agreement, we can subsequently address the areas of inconsistency"

Christophe Castaing: "This meeting has been very valuable and we are very interested in continuing and we want to be part of the process and share the information and explore deeper forms of collaboration", "some technical issues could be addressed nationally, in conjunction with BuildingSmart"



Lars Liden: "The directive will drive the need for a common language"

Andreas Heutink: "We can collaborate and we need to work with the manufacturers"

Dr Wolfgang Eckart: " Agree on the need for a common language, we need to bring the disparate national activities around this together"

Haruldur Arnórsson: "today has been positive and we would value continuing"

Marianne Thorbøll: "Agree that we need a common 'dictionary / language'"

Barry Blackwell: "Do we want to constitute ourselves formally and notify groups within the EU or to be an informal 'club'"

Andreas Heutink: "That depends if we can all agree on what we should work on?"

Angelo Ciribini: "a cross-rail style 'school of BIM is needed"

Lars Liden: "We should start as a network and to rush to create a formal organisation", preference to start as a 'virtual network'

Souheil Soubra: "First level, 'virtual network' should be easy, second level may be dependent on funding, EU funding should be relevant"

Adam Matthews Reflecting the proposal of a virtual network first, with a subsequent discussion re. Strategy development for a common dictionary

Tom Hermansen: "Supports the Netherlands position - priority should be an open standard" "Norway agencies have published a statement, Sweden has a plan for a similar statement

Pietro Baratonio: "Agree with the concept of a standard dictionary but we have different cultures and backgrounds, many countries are not present, we can describe some common understanding but we should not create a mandate in the short-term. If we are formal, we will not progress fast"

Mark Bew: "We are agreeing to a 'sharing network' with some short-term focus on standards. We should start small and work up" "We should consider a commercial model including insurance and copyright, we also need to consider how to create capacity quickly"

Ergo Pikas "It would be a great opportunity for us to learn from others but a formal agreement might be too much"

Mark Bew "The first deliverable should be a statement of our intent to work together, the second would be a definition of how we might work together" "Understanding the current state and then how we can collaborate" "We want to increase EU exports"

Diderik Haug "We are talking about creating a common market, starting as an informal network, let's start slowly with an aim for a common EU BIM" "The building industry is very traditional, with very little R&D. I hope we can collaborate and eventually the group will 'die' because we have achieved our goals of a common market.

Adam Matthews: "To signal intent to the sector, we should 'announce' the informal network and invite the other nations" "The group will communicate the outcomes of this meeting to Carlo Pettinelli and his team (EU Commission DG Enterprise)

Lars Liden / Mark Bew: "Important that Infrastructure is also in scope, we need greater representation from Infrastructure", "We don't represent all of the clients, we need to look to extend the representation

Tai Fat Cheng "Aims for a similar group in Asia, representing the client"

"See this group focussed at the strategic level, leaving the technical details to other organisations e.g. BuildingSmart"

Diderik Haug: "The core of this group should be the public clients, but we won't be closed-off and we will work with other groups. We should be good clients to BuildingSmart"

Benno Koehorst: "Reference to CEDR group representing roads"

## Summary of Actions & Next Steps

The following actions were agreed at the conference

The UK & Norwegian teams would report back to the EU Commission DG Enterprise with a summary of actions and next steps

We would recommend the creation of a network of public EU clients to share information to support Member Nations implement BIM and provide Guidance

1. Make a public statement to collaborate
2. Include other member states, identifying the right contacts
3. Share best practices, common goals, benefits and approaches

We would develop an EU strategy paper for public sector BIM

1. Agree common goals
2. Propose funding models for delivery
3. Data dictionary / Technical standards
4. Commercial considerations across the EU
5. Growth capacity in home markets and the EU



## Attendees

**EU BIM Conference, 22nd October 2013, Brussels**

| <b>First name</b> | <b>Surname</b> | <b>Country</b> | <b>Organisation</b>  |
|-------------------|----------------|----------------|--|
| Peter             | Kompolschek    | Austria        | Austria Standards  |
| Jurgen            | Koggelmann     | Germany        | Ministry for Transport, Building and Urban Development               |
| Wolfgang          | Eckart         | Germany        | Ministry for Transport, Building and Urban Development               |
| Marianne          | Thorbøll       | Denmark        | BYGST  |
| Ergo              | Pikas          | Estonia        | Ministry of Economics & Communication, Building & Housing Department |
| Oliver            | Lätti          | Estonia        | Ministry of Economics & Communication, Building & Housing Department |
| Margus            | Sarmet         | Estonia        | Ministry of Economics & Communication, Building & Housing Department |
| Auli              | Karjalainen    | Finland        | Senaatti   |
| Frank             | Hovorka        | France         | La Caisse des Dépôts et Consignations                                |
| Pascal            | Lemonnier      | France         | Ministère de l'Écologie du Développement durable et de l'Énergie     |
| Patrick           | Ponthier       | France         | AIMCC, association des industries de produits de construction        |
| Souheil           | Soubra         | France         | CSTB   |
| Christophe        | Castaing       | France         | EGIS   |
| Alain             | Maury          | France         | MediaConstruct   |
| Barry             | Moyles         | Ireland        | Office of Public Works   |
| Haruldur          | Arnórsson      | Iceland        | Government Construction Contracting Agency                           |
| Pietro            | Baratono       | Italy          | Ministero delle Infrastrutture e dei Trasporti                       |
| Angelo            | Ciribini       | Italy          | University of Brescia  |
| Andreas           | Heutink        | Netherlands    | RWS  |
| Benno             | Koehorst       | Netherlands    | RWS  |
| Jeroen            | Burger         | Netherlands    | RGD  |
| Diderik           | Haug           | Norway         | Statsbygg  |
| Øystein           | Graffer        | Norway         | Statsbygg  |
| Øivind            | Rooth          | Norway         | DIBK   |

|                 |           |  |
|-----------------|-----------|--|
| Tom Hermansen   | Norway    | Defence Estates Agency                       |
| Lars Liden      | Sweden    | National Property                            |
| Tai Fatt Cheng  | Singapore | BCA  |
| Mark Bew        | UK        | BIM Task Group                               |
| Barry Blackwell | UK        | Department for Business, Innovation & Skills |
| Adam Matthews   | UK        | BIM Task Group                               |
| Richard Lane    | UK        | BIM Task Group                               |



