Introduction - Bridge management

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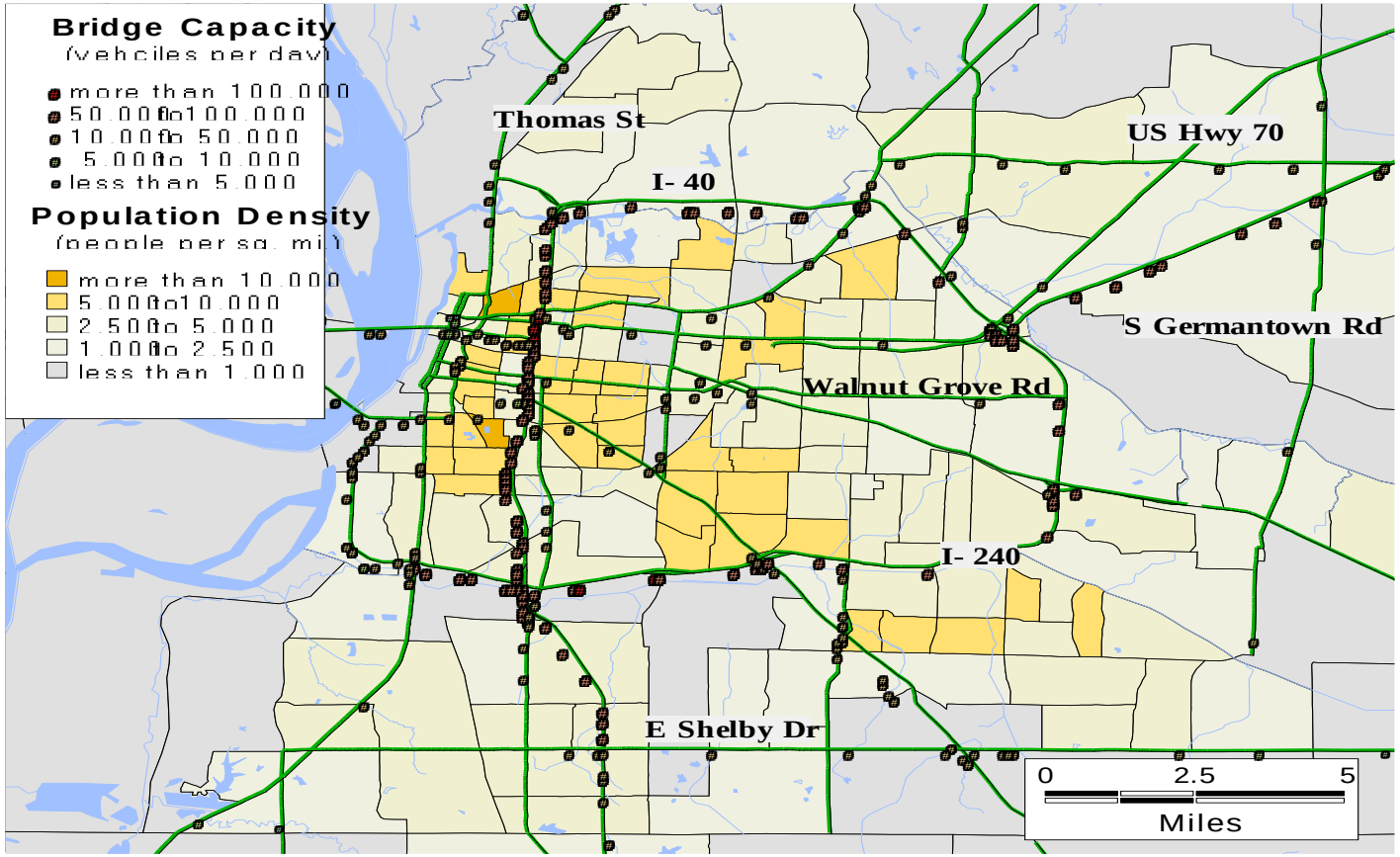
SeeBridge
Semantic Enrichment Engine for Bridges

Bridges allow us, to reach our workplaces, services, schools, to transport goods to their various sale points or to make the most of our free time



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Roadway **bridges** are the **most critical** components of road infrastructures.

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Bridge management is a task of great responsibility

Bridge management – The challenge

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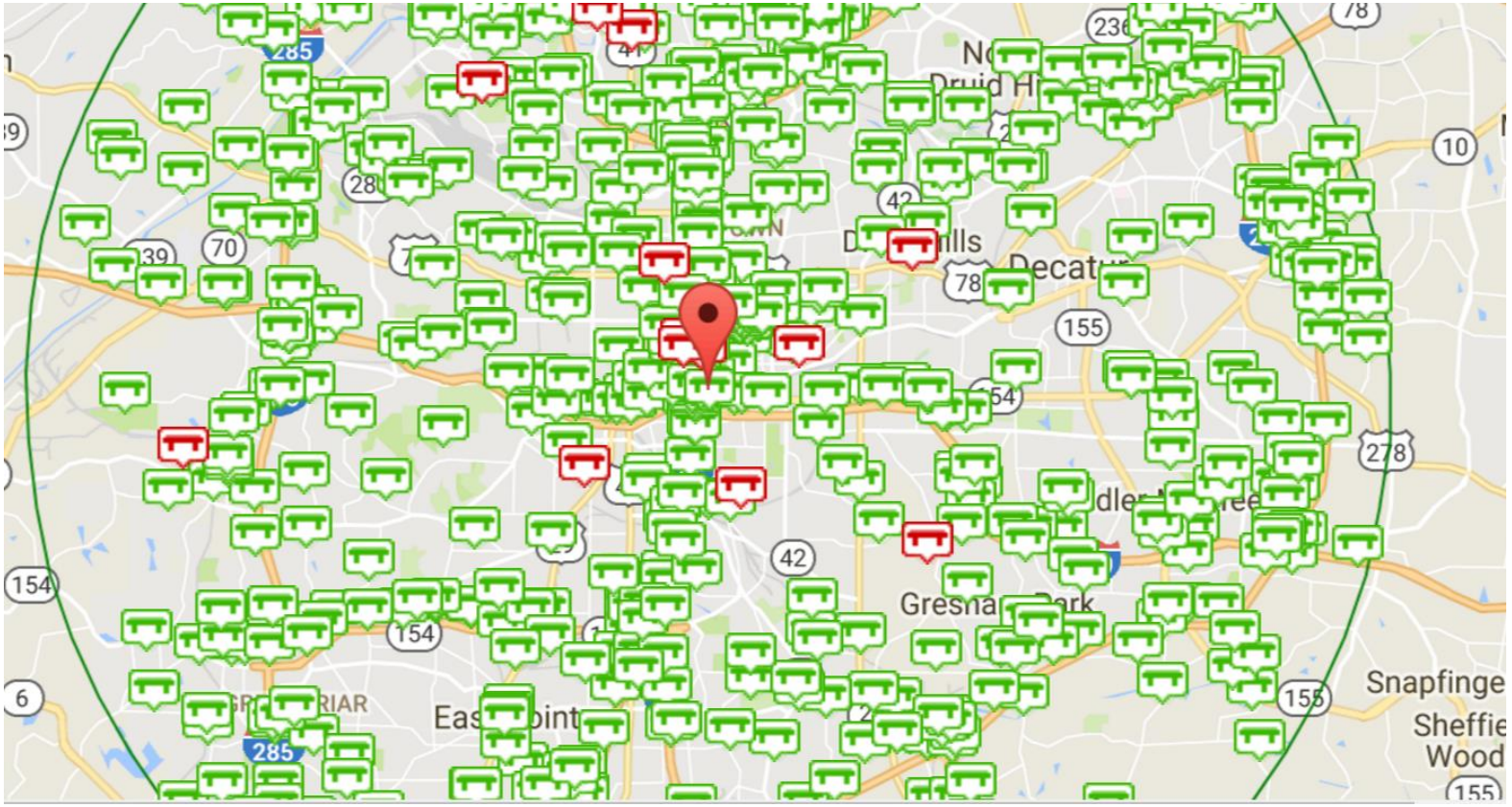
- Large number of bridges and road structures



Bridge management – The challenge

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- Aging structures

Bridge management – The challenge

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- New structures within a complex and dense network

Bridge management – The challenge

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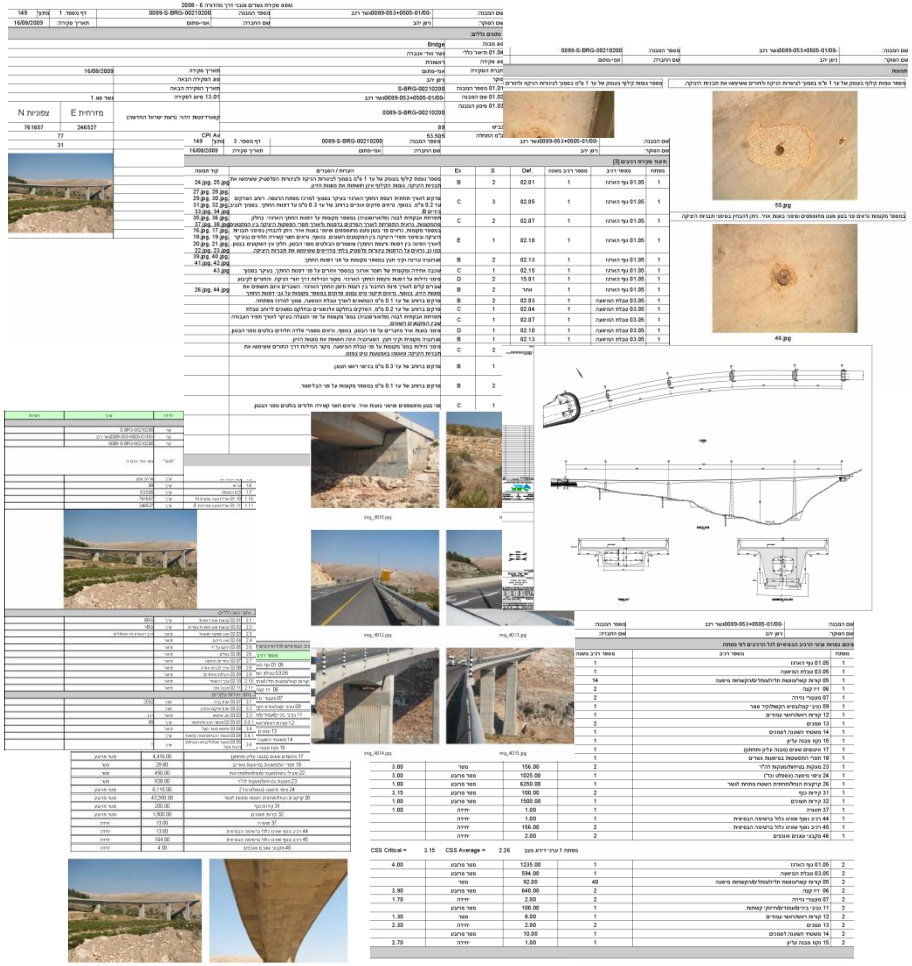
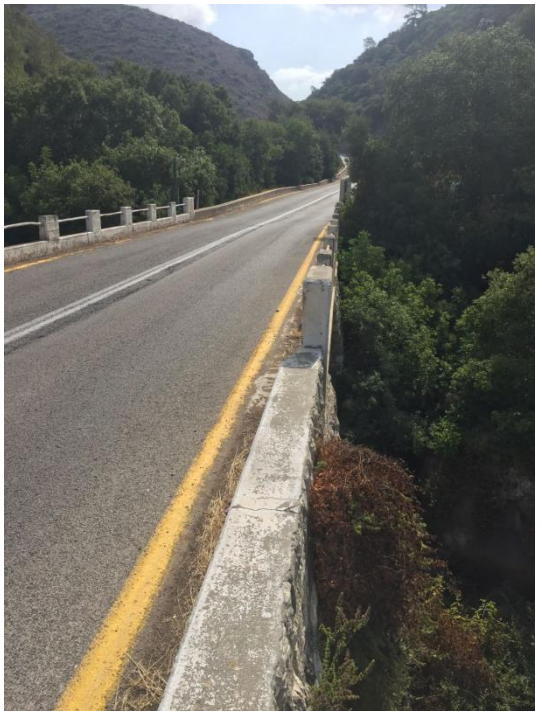
A lot of data

Or

No data



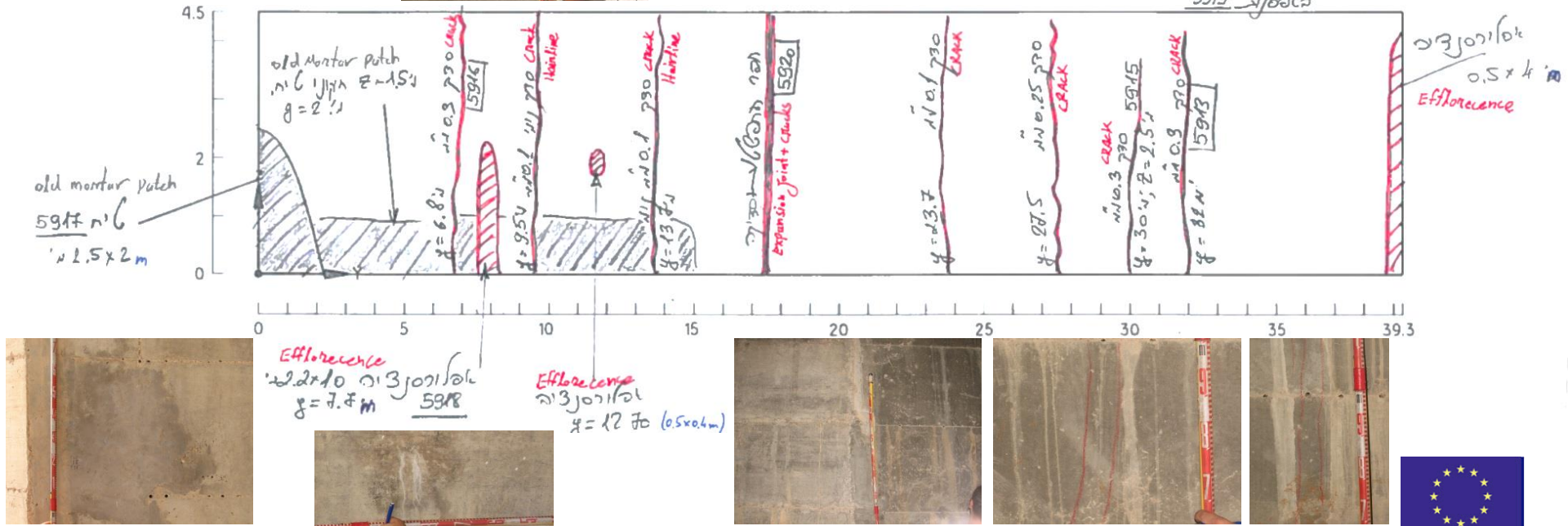


Bridge management – The challenge

- Constant need for detailed, updated data throughout the bridge's lifetime
- New data should be comparable with old

Abutment A

Scale: 1:200/100



Bridge management – The challenge

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- Accessibility problem - we impact on the road user

Bridge management – The challenge

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- Minimize Cost
  vs.
  Maximize service level

Bridge management – The challenge

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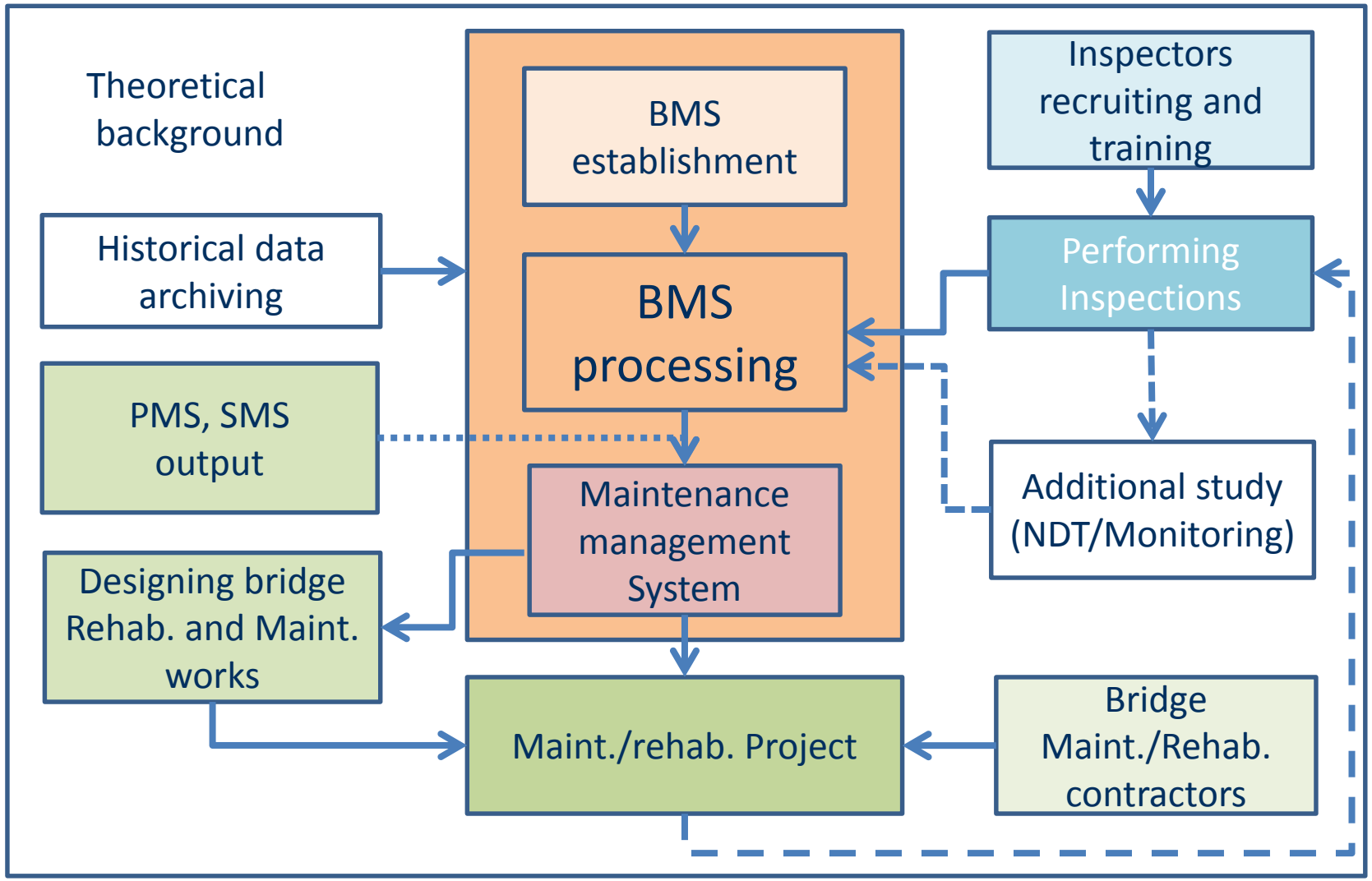
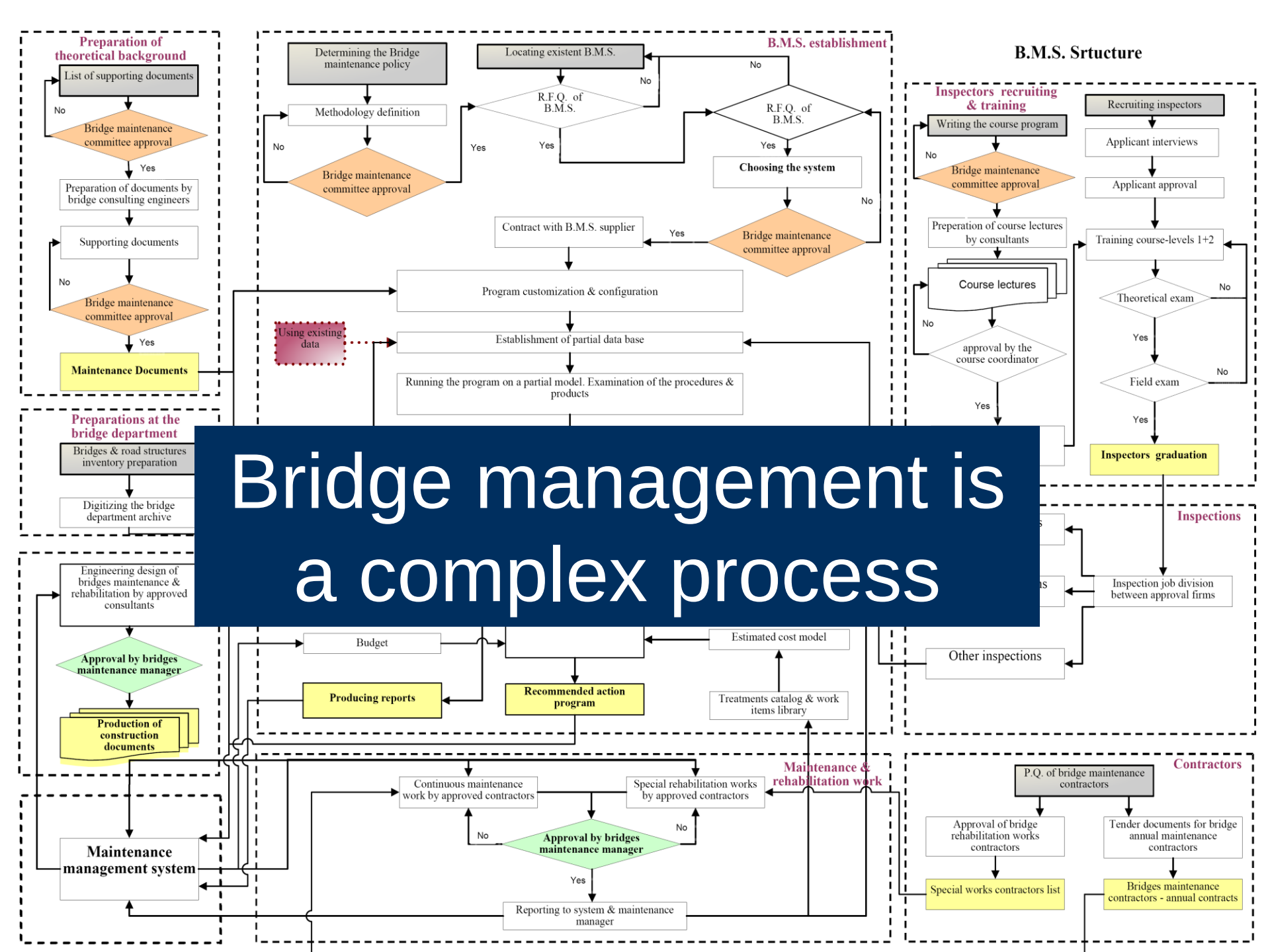
1. Large number of bridges and road structures
2. Aging structures
3. New structures within a complex network
4. A lot of data or no data
5. Constant need for detailed updated data
6. Accessibility problem – we impact on the road user
7. Minimize Cost vs. Maximize service level

How can we improve the process ?

Simplified Bridge management process

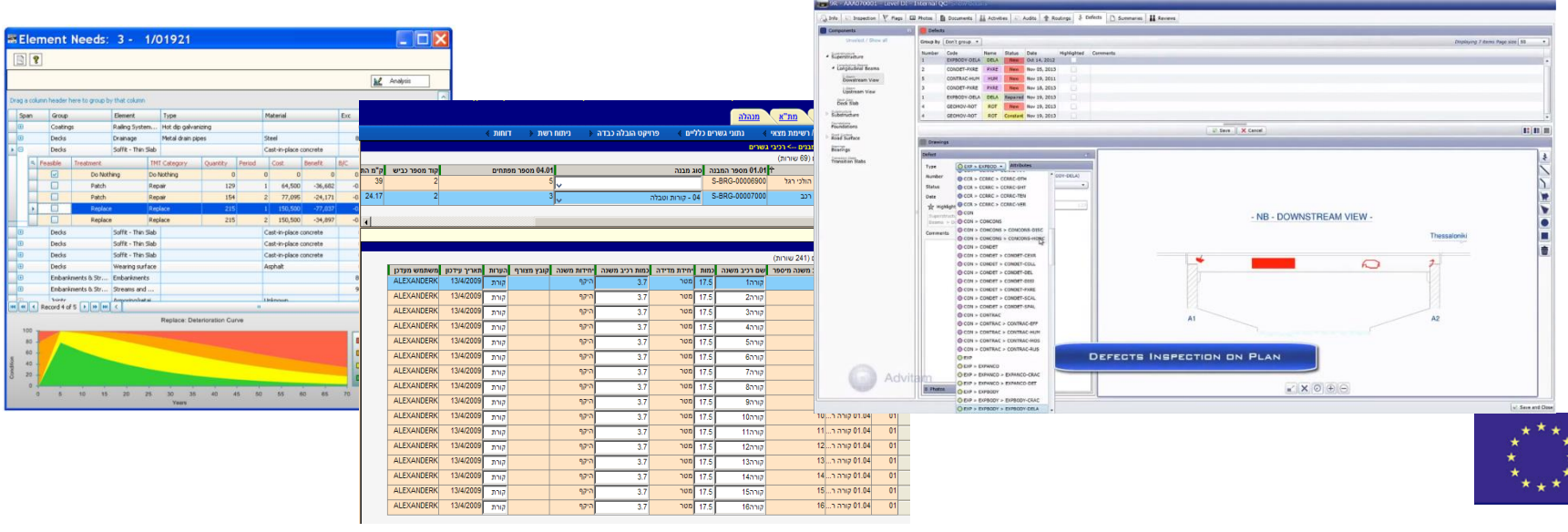




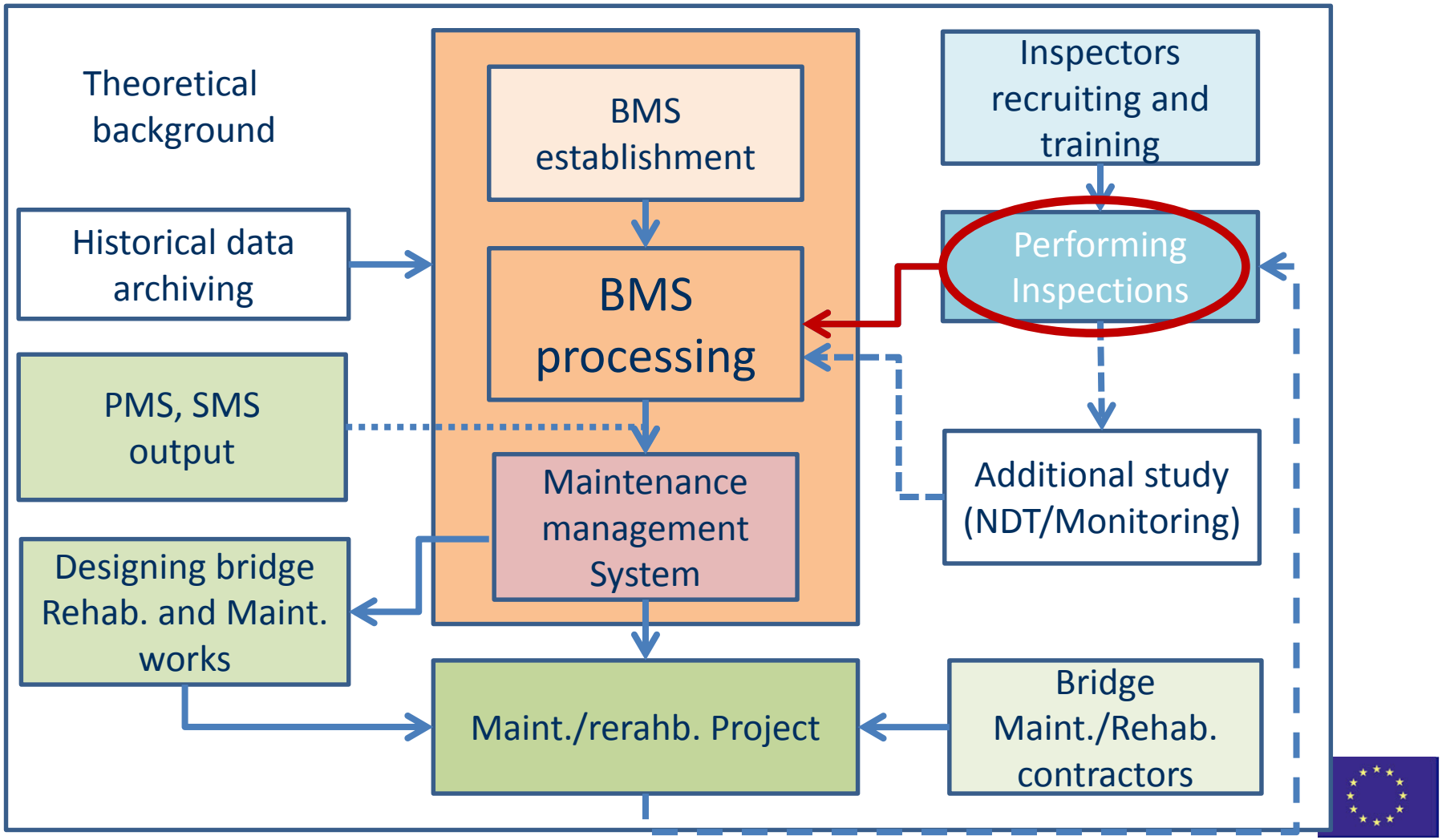
Bridge management is a complex process

Bridge management – The challenge

- Different countries/organization have different methodologies
- Different levels of data mostly depend on inventory size, organization type and country regulations
- Almost all BMS are tabular based and hard to manage. Most of them present a similar architectural framework. Some have better bridge visualization.



Simplified Bridge management process



Weaknesses of present practice

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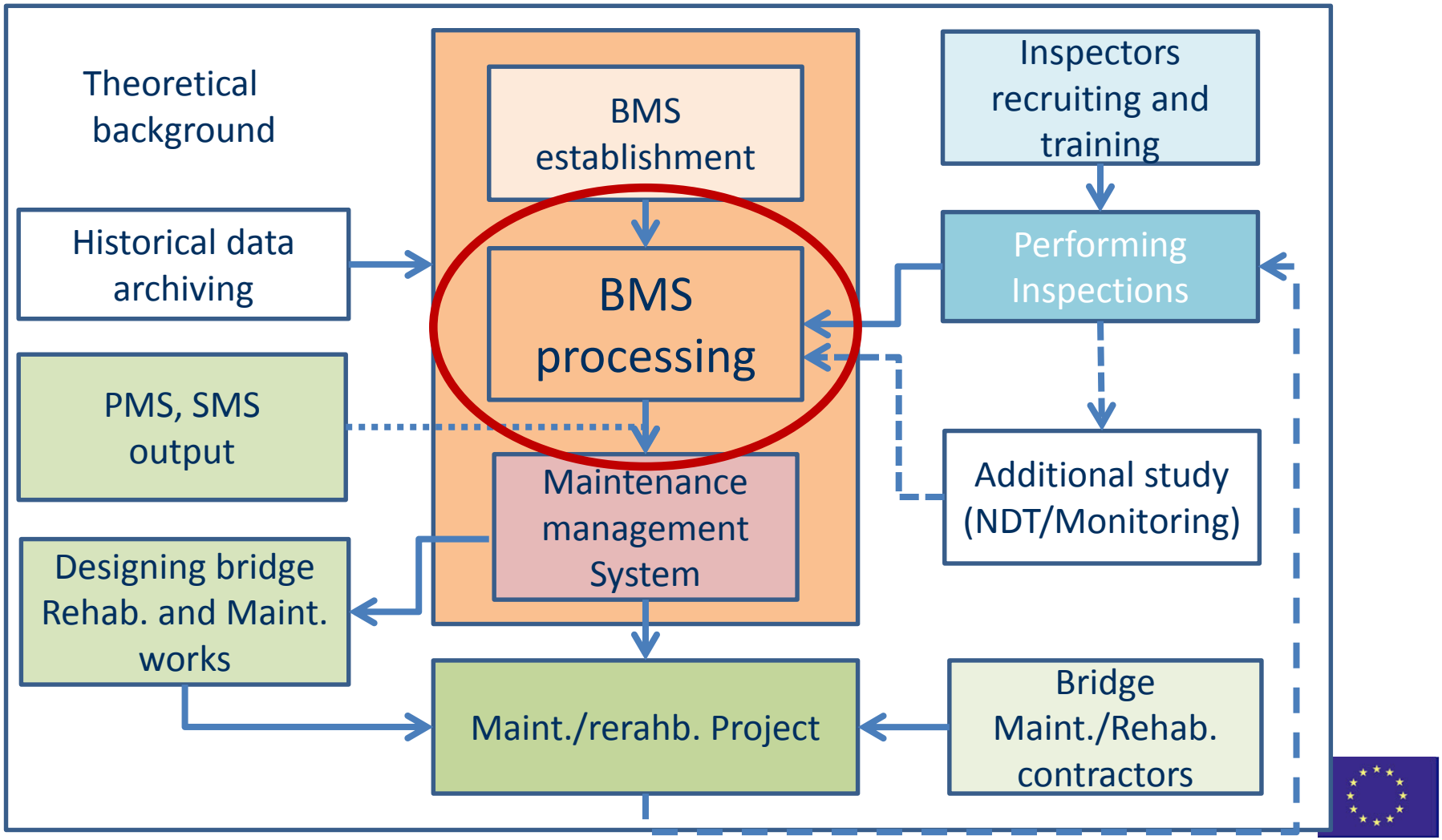
On Inspection level:

- Full manual inspection work
- Highly subjective assessments
- Retrieval of previous inspections data is not easy, you need to download high volume of data and try to find the relevant items.
- Extensive use of non digital forms with very limited sketch ability (except for hand sketching)




Simplified Bridge management process



Weaknesses of present practice

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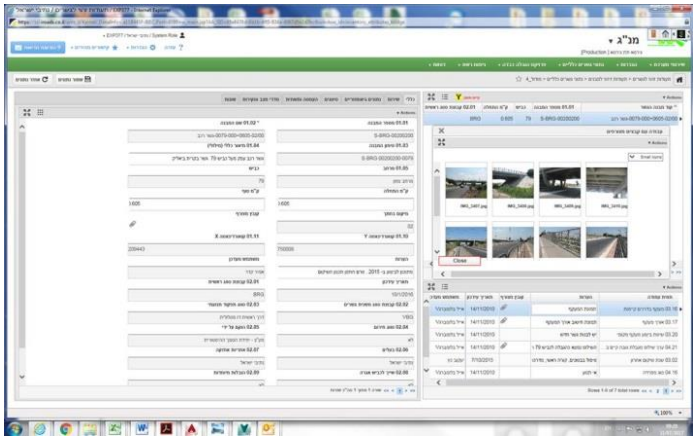
On the management level:

- Data is managed through database tables without real structure visualization
- Hard to create a complete view of a whole bridge performance with quick drill down into details and causes
- Complicated data stream from site to processing and decision making stages
- Non transferable data from one system to other



What are the problems that SeeBridge seeks to solve

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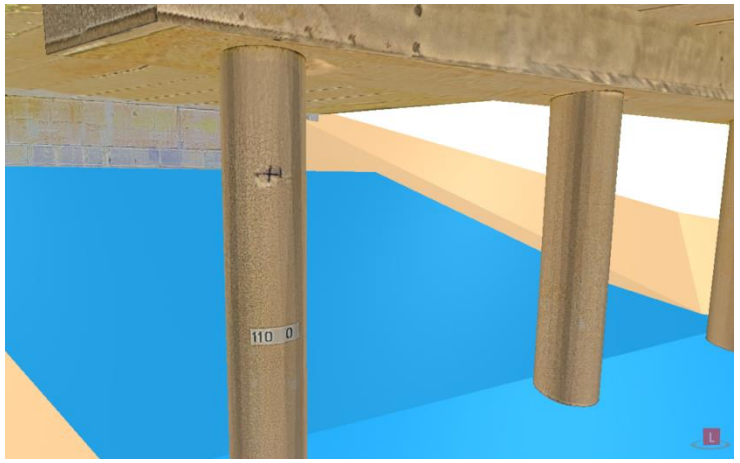
What are the problems that SeeBridge seeks to solve?

- Improve inspection process, more efficient and quality data
- Reduce site subjective processes to minimum
- Connect inspection data directly to bridge BIM model
- Reduce data loss to minimum



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What are the problems that SeeBridge seeks to solve?

Reduce the gap between the **quality of data available** in BMS and the **information needed for reliable decision-making** and subsequent design and construction work by:

- Enable 3D BIM bridge data management through bridge life
- Make all data comparable throughout time (4D)
- Enable bridge experts to view results in a fast, reliable manner and use it for design
- Enable data export with unified process