



LEGALLY BINDING DIGITAL MAPS

*Recommendations for establishing an
infrastructure for digital publication
of the geography of legal rules*

INTRODUCTION

Denmark is working towards publishing all spatial data digitally in the future. The new Maritime Spatial Plan will be the first legally binding digital plan in the country.

The legislation in some areas today is so complex that it can be difficult for citizens and businesses to understand which rules apply. Legislation with numerous exceptions, unclear concepts or many process requirements is also difficult to administer, and can result in long case processing times and may also prevent effective administration utilizing digital capabilities. It is important that the legislative preparatory work considers the manner in which rules are to be administered in the digital society that Denmark is today.

In recent years, the Danish authorities have frequently discussed how maps appended to laws and regulations are designed, so that there is no doubt regarding which physical area a given legal rule applies to. This discussion has become particularly pressing with the introduction of the first Maritime Spatial Plan (MSP) of Denmark, which is aimed to be digital. Numerous other countries participating in the Baltic Sea regional MSP project, Pan Baltic Scope, have also shown interest in learning more about the legal implications of digital MSP data.

The current situation – and the desired situation

Until now, map attachments and coordinates have been published as pictures or text in the Danish Law Gazette. This is also the case for

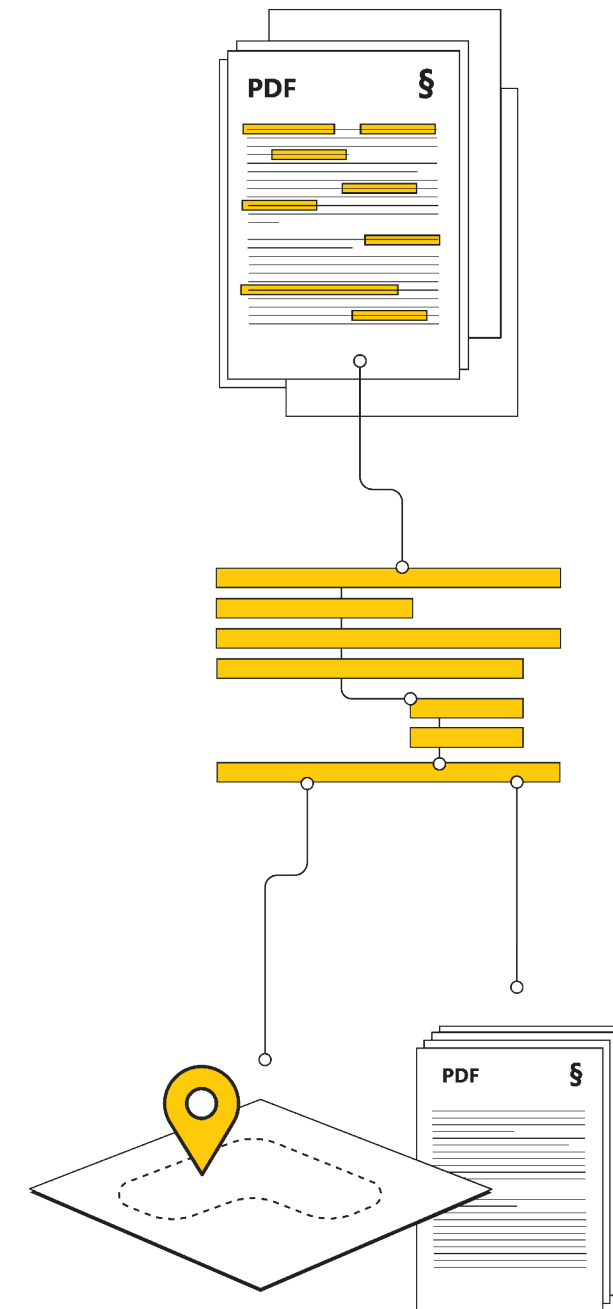
digital spatial data, which in this connection has had to be converted into images. Subsequent administration processes have the information embedded in PDF documents that do not make data available digitally to administration systems.

Because these images and the analogue information that accompanies them are of varying quality and resolution, it can be difficult to interpret the information correctly.

Publication of spatial data should occur digitally in future. It should be possible for the published spatial data to be used, without hindrance, in their continued digital form in administration processes and to be compared with other published spatial data.

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The Agency for Data Supply and Efficiency has subsequently described a number of issues regarding background maps, history, interoperability and storage, which should be further investigated as part of the process of establishing an infrastructure for digital publication of the geography of legal rules. These issues are considered to be highly applicable for other countries as well.



Legal texts and map attachments in PDF format should be processed and georeferenced in a data model in order to tie the texts and the maps together and standardize the data. The output will be legally binding maps. © Danish Business Authority.

Background map

- The background map must be based on the applicable standards
- The map must also cover the entire country - including the sea and coast

History

- There must be a full history for reference data, metadata and data models
- Consideration should be given to how history is displayed in services

LEGALLY BINDING MAP

Interoperability

- Metadata must be described based on ISO standards
- The data basis must be evident from the metadata
- It must be possible to compare data with other basic data

Data storage

- A new central function must be established for data storage
- The central function must be integrated with other state legal information systems

BACKGROUND MAP

It is important that it is possible to unambiguously identify where the geography of a legal rule is located in the physical world. This is ensured by using a background map that is based on the standards that apply for spatial data.

It is recommended to actively decide which requirements should apply to data that is contained in a background map in order to ensure homogeneity, quality and current relevance. It is also recommended that only data that meets these requirements should be used as a background map for digital publication of spatial data.

HISTORY

When an authority makes decisions based on a legal rule and its associated geography, it is essential that the context, that applied when the legal rule was adopted, can be identified.

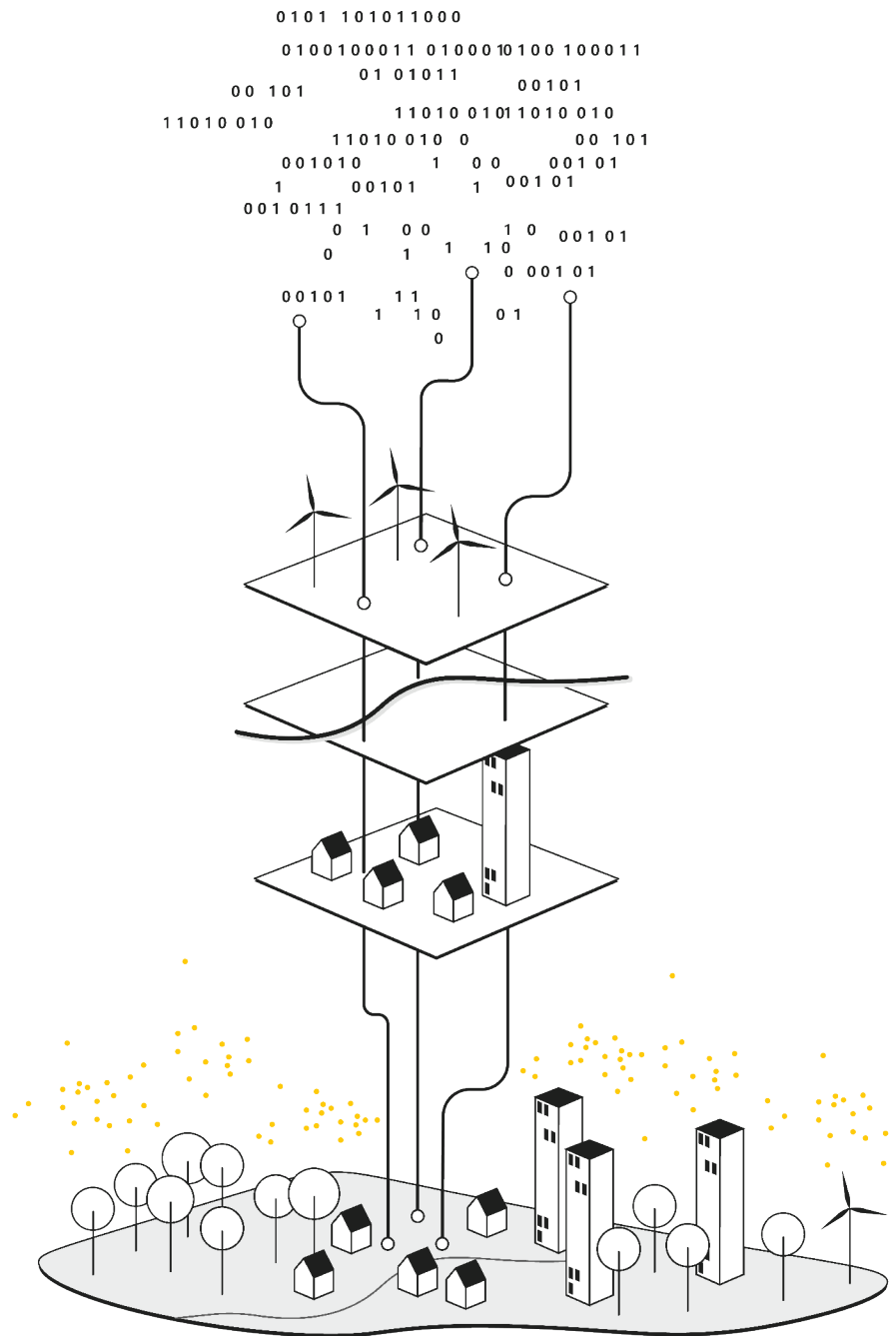
Today, many digital maps only reflect the situation as it exists at present, and it can be difficult or impossible to find previous versions. This applies to reference data, including background maps, but also to metadata and data models.

It is recommended to decide how history should be displayed in services, and that requirements are drawn up for how the legislature makes the history available for metadata and data models.

INTEROPERABILITY

In order to achieve more efficiency and better quality in decision-making processes, the data contained in legal digital maps needs to be logically structured and accessible – and thus interoperable. Incorporating data from various legislation into one's own administration





By using a common standard for all maps and data, the data can be compiled into one overall legally binding plan. The users will also be able to select and view the individual layers that make up the legally binding plan. © Danish Business Authority.

systems reduces the need to exercise discretion with regard to e.g. analogue maps and other data in the system.

It is recommended that data contained in legal digital maps should be described with meta-data, and that this is implemented on the basis of ISO standards. The metadata must indicate which data basis the legislature has used in shaping the legal rule's location, origin, access and accuracy. Finally, it must be possible for data to be compared with other basic data.

DATA STORAGE

After the adoption of a new piece of draft legislation, the legislation must be retained and displayed in a way that ensures that it is the exact version of the law adopted by the Danish Parliament (Folketinget) that is accessed and applied. In this context, it is essential to have a third party store the data, so that the legislature does not, whether intentionally or unintentionally, edit legislative documents in which the legislature may be one party in a dispute.

It is recommended to investigate whether there would be benefits in establishing a new central

function for handling the publication of spatial data. It would have to be possible for such a central function to be integrated with the other state legal information systems.

Further work on legally binding maps

The Danish Business Authority and the Danish Maritime Authority have begun to work with legally binding maps in practice, based on specific plans for land and maritime areas respectively. Both authorities have so far identified a need to make legally binding maps user-friendly and available to all citizens. Safety issues and the allocation of rights to relevant individuals are also aspects that have been highlighted by the authorities as being important. The Danish Business Authority also requests standardised requirements for topology and styling.

By implementing the requirements for legally binding maps in practice, the Danish Business Authority and the Danish Maritime Authority hope to be able to advance the process of achieving a common future solution, where public, digitally registered geographical boundaries can appear as legally applicable.



