

Data Governance and Master Data Management

This document provides a **brief** introduction to Master Data Governance and Master Data Management, before exploring how STATE3 Enterprise enables organisations to develop their data management potential.

This document will provide:

- A high-level view of Master Data Governance
- How organisations connect a vision of data, with principles, policies and procedures
- A high-level view of data governance and a modification for implementation.
- Quick overview of domain and data stewards, data roles
- An overview of Master Data Management
- How STATE3 Enterprise & data governance works with.
 - Organisation View / Structure
 - Business Units
 - Business Activities
 - Business Activity Flows
 - Interactions
 - Data Entities
- Data in the S3E Technology Map
- Data Entities
- Impact Assessments
- Summary

Introduction

Data is the life blood of any organisation, created through various processes and important to informed decision making. It is mastered by technology, with data stewards as its custodians and is regulated by as many as 72 different pieces of legislation globally. Long story short, it's a challenge for any organisation to manage data let alone harness its wider potential.

Master Data Governance

Getting data under control requires the will of the organisation to start the Master Data Governance (MDG) journey. This whitepaper is not comprehensive and will only introduce key concepts in relation to STATE3 Enterprises (S3E). The value of getting MDG right can support better decision making around potential opportunities or possible risks the business is facing.

Master Data Governance determines the rules around how data is treated (e.g., the classification of personal or PII data). Master Data Management ensures that PII data is encrypted in transit and has correct authorization around its access.

Data is an Asset

The starting position for any forward-thinking organisation is to consider what the overall **vision** for data is. The data vision should align and support the stated strategy and goals of the organisation. As this is developed it will be further mandated by **policies**. Ideally, there needs to be a 'data champion' at the board/executive level. This person will support the organisation with experience and expertise (e.g., Chief Data Office), as it begins the data journey.

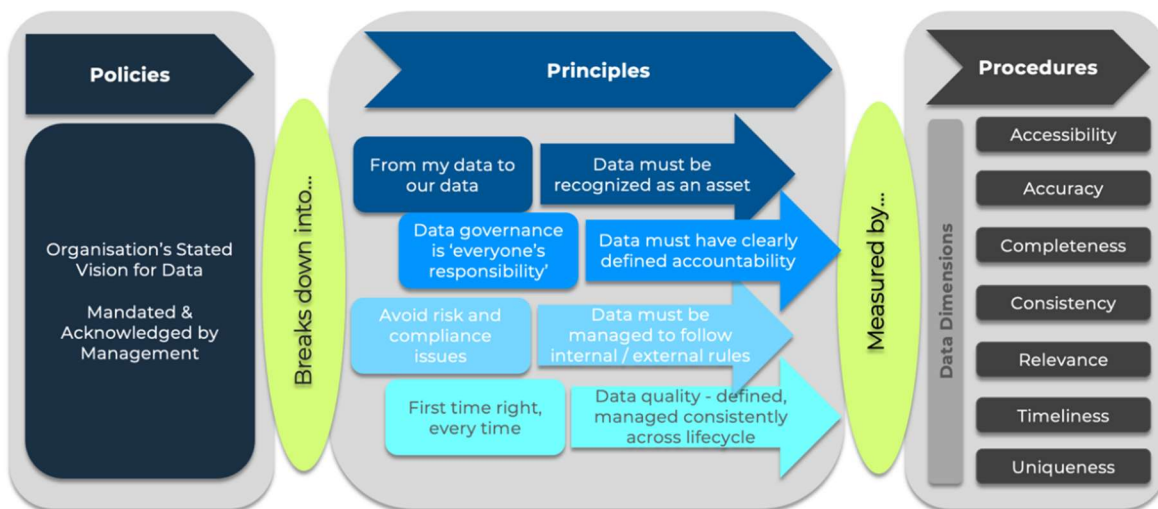


Figure 1: Example of how policies break down into principles, implemented as procedures and measured by specified data dimensions.

Once the organisation has its **vision** and is mandated, it can be broken down into working **principles**. This provides a generalized view of how data will be managed by users. Principles can be used to guide the delivery of **procedures** for data management and further measured by the **data dimensions** that apply. The latter is tricky for many organisations and relies on a business intelligence / data / analytics capability to determine the maturity of data as a starting position.

Implement a Governance Structure

Following the development of a vision and corresponding principles, a **Data Governance framework** can be adopted to support the delivery of specific procedures and measurements.

The following diagram is often depicted as an approach to data governance. How it is implemented requires an understanding of the overall data maturity level within the organisation and its business structure.

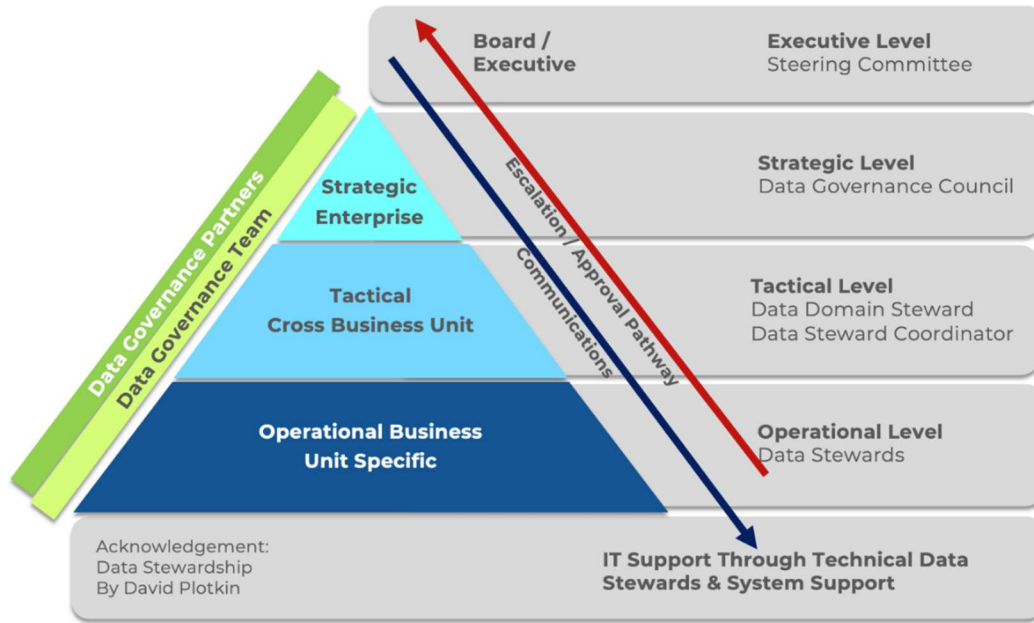
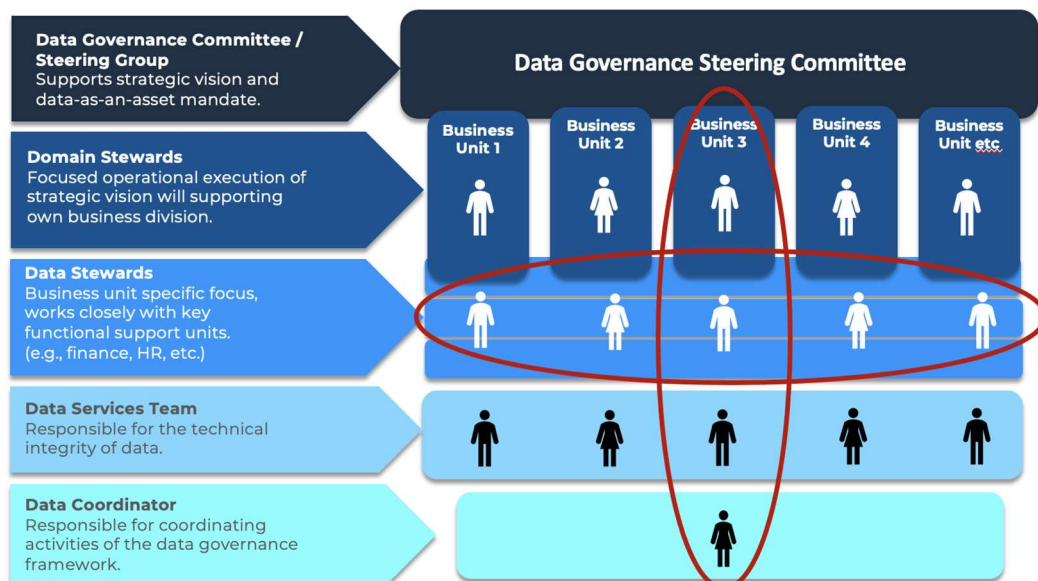


Figure 2. Data Governance Framework (Acknowledgements)

Example:

The following example provides a view of how the above data governance framework can be adapted from the generalised Data Governance Framework (above). In this case the candidate business has vertical business units and delivers shared services as a cross functional function. At every level of the organisation the vertical and cross functional data needs are supported via domain stewards and data stewards.



Domain and data stewards report into the **Data Governance Steering Committee (DGSC)** who coordinate the activities of all stakeholders, ensuring alignment with the overall vision. The data coordinator is a role that is often left out of governance models, however ensuring the DGSC and stakeholders are themselves coordinated can take effort in addition to the raft of activities.

About Data Roles

Roles can be used in a myriad of ways depending on the needs of the organisation, its structure, industry goals and objectives. With this flexibility comes opportunity to determine what works for your organisations, although it's important to note that being in a data domain or data steward role does not relate to a specific position but tasks, which are related to the extension of responsibility of a current role (see definitions below)

Master Data Management (MDM)

Master data management (MDM) is a technology-enabled discipline in which business and information technology work together to ensure the uniformity, accuracy, stewardship, semantic consistency and accountability of the enterprise's official shared master data assets. [2]

Master Data Management, as component of governance, considers all operational processes from the creation of master data through to its disposal. Core to the concept of master data is the ability to reduce duplication of data across the business¹

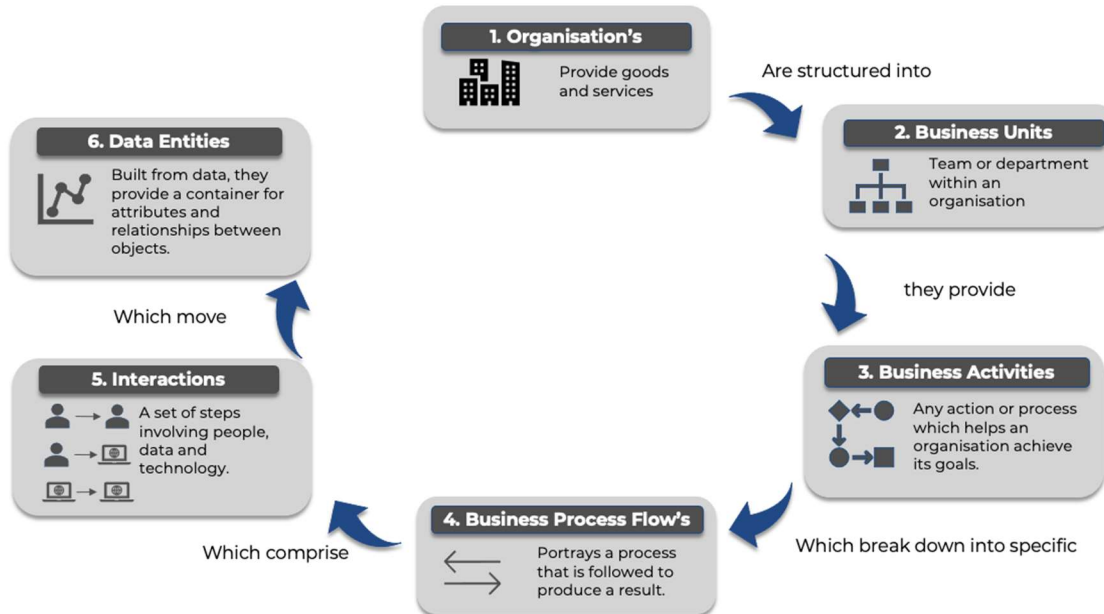
Data & STATE3 Enterprise (S3E)

STATE3 Enterprise (S3E) takes a wholistic view of an organisation's ecosystem. While many tools support a view of the business or a view of the technology that drives it, S3E combines both to ensure that IT and the business are aligned. Data can be seen as a connecting thread between both. It requires technical expertise to ensure that the data dimensions are fit for purpose and to the level the business requires, and conversely that the business can use data in context to drive better decision making.

STATE3 Enterprise allows users to work at a technology or business driven level to collect information. The following will show how users are able to come from a business / organisational level, before dipping into how data is managed in the technology view. In S3E, both are important and where you start will depend on what is critical at the time. As an iterative tool, as more is discovered, more is captured.

High level view of where data sits in organisations.

In STATE3 Enterprise everything is connected and it's important to consider the context.



1. Organisations

In S3E organisational structure is important to capture as it provides a natural hierarchy of how goods and services are delivered to customers. We capture this as it is today, reflecting the actual set up of the business.

2. Business Units

S3E can reflect the inclusion of business units or teams. In S3E we can assign job roles / people into business units and show how their roles complete business activities and flows.

3. Business Activities

Once your business structure has been set up, S3E looks to assign business activities to the organisation's structure. Business Activities can relate to a cluster of processes that show what that team delivers. For example – the Sales team may be responsible for inbound sales, account management, partnerships etc. Each of these would be considered a business activity and have different business process flows associated it with.



Figure 3. Screenshot from S3E, showing how organisational structure can be broken down into business units and the business activities they perform.

4. Business Process Flows

Unlike traditional business process mapping, we begin with business or system triggers that start this process before breaking each step down into the interactions between people and technology.



Figure 4. STATE3 Enterprise view of handover points between people and technology.

The result is an end-to-end understanding of the business process as it moves between people and technology. We can also see where data entities are involved and at which step.

Flows

Inbound Sales Order	Manual 8%	Interactive 25%	Automated 67%	⋮
tanial.armstrong@state3.co.nz	Created 11 months ago	Last updated 2 months ago	Last published never	

Figure 5. High-level view of a Business Flow, showing how manual v interactive v automated the end-to-end process is.

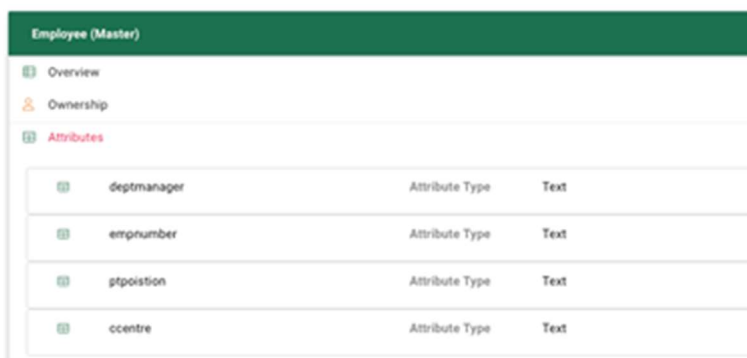
At a high level we can start to understand how ‘automated’ a process is. This is helpful for supporting business process reengineering to increase overall efficiencies, ahead of an upgrade / replacement of a system. By taking audit and understanding how processes are currently performed, decisions can be made about scope for upgrade or replacement.

5. Interactions

At a sense-making layer, S3E wants to be able to follow the movement of data entities as they flow through the organisation. Each step in the business process flow allows data entities to be associated with that step. For example – prospective customer data can be collected in a first call before being consolidated as ‘customer data’ once a sale has been made. Each interaction can consider what happens in that step and what data is collected, used, or modified.

6. Data Entities

While data is literally a building block, a **data entity** is a set of building blocks which share a common characteristic². In S3E, data entities are understood at a data **attribute** level.



Employee (Master)		
Overview		
Ownership		
Attributes		
deptmanager	Attribute Type	Text
emprnumbr	Attribute Type	Text
ptposition	Attribute Type	Text
ccentre	Attribute Type	Text

Figure 6. Screenshot from S3E showing a data entity (e.g. employee). Specified attributes can be included along with attribution type.

Understanding data entities at an attribute level can assist with defining what data is mastered by which system. It also assists with making sense of the internal discussions. For example, ‘employee’ data might be owned by the HRIS system, but it also may be owned by payroll. Considering data attributes helps users to understand that HRIS owns

demographic / PII data, payroll may own employee payment details.

Data in the Technology Map

Until this point we have considered data entities and the processes they are associated with, in one view. From a high-level view, S3E users can consider how data fits within a technology perspective.



Figure 7 Screen shot from S3E showing the interaction between two technologies, the ERP and CRM.

In the S3E technology map, we consider how technologies interact with other technologies.

Behind the simple node (**technologies**) and lines (**interactions**) diagram lies a wealth of information which can be accessed by clicking and choosing 'edit' mode.

Of note in Figure 8, is the highlighted red box – data entities. This information can be captured via a business activity flow or via direct input via editing the interaction.

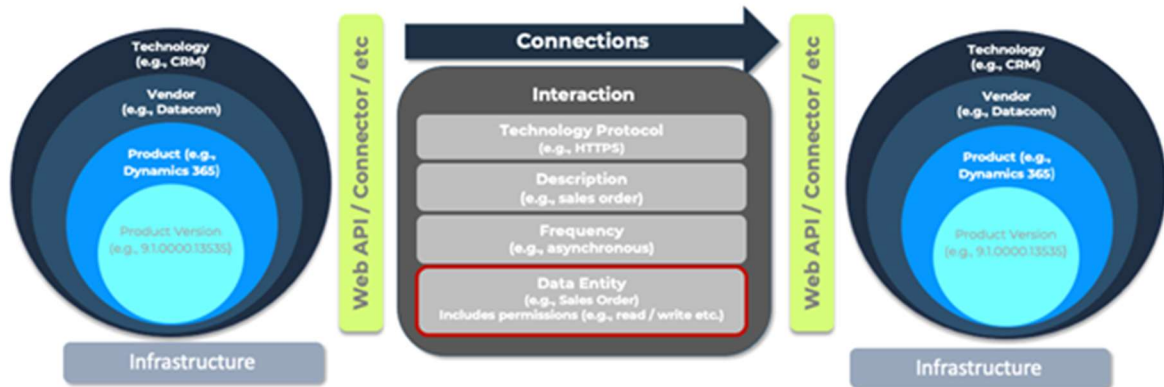
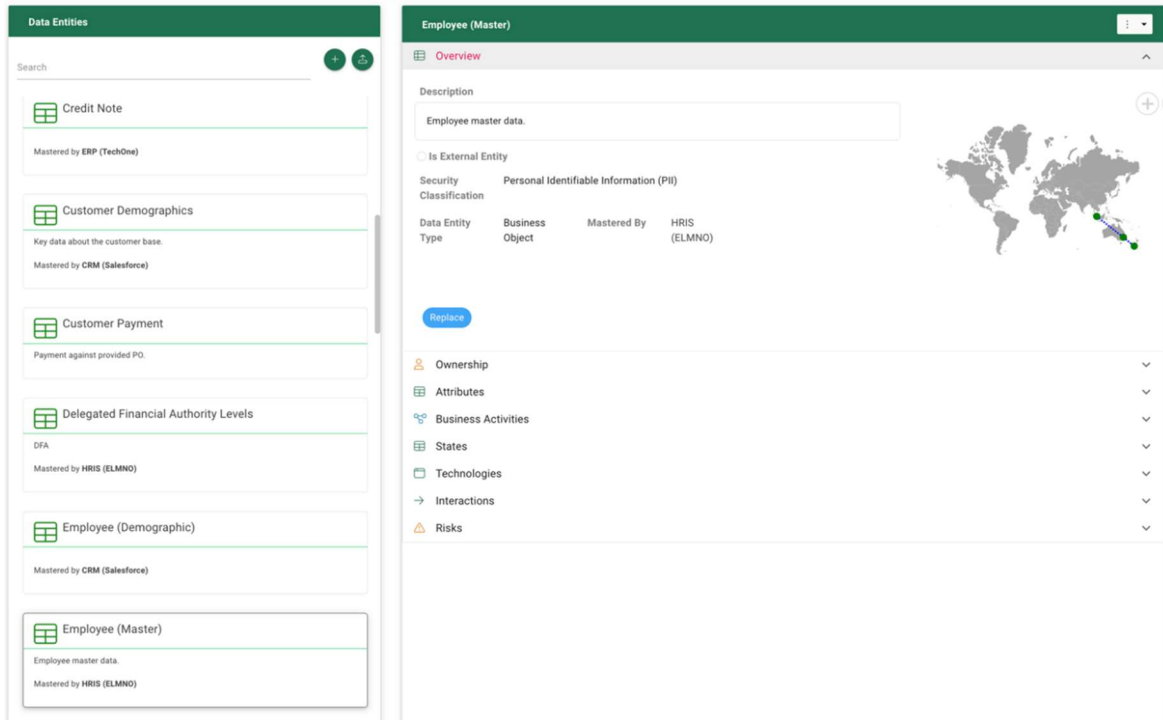


Figure 7. Stylised diagram of how S3E connects the 'nodes' and 'lines' of the S3E Technology Map.

Lastly data entities have their own 'home' in S3E. This area allows users to browse the data entity catalogue or visualize the relationships between data entities.

Data Entities Catalogue View

This view provides details of the data entity. From a base description through to classification, data entity type and its master system. As business data exists in applications, we ensure that the relationship between data, technology, infrastructure and location is known. The map on Figure 9, shows where this data is physically located via its datacenter infrastructure. This helps the organisation to understand where its data is. This creates a governance understanding of where data is and if it is compliant to local regulatory requirements (e.g. GDPR, PRA etc).



The data entities catalogue also outlines ownership (i.e. business, technology and process), the individual attributes (see 6. Data Entities) and what Business Activities it features in. This can also be broken down into interactions so a user is able to understand where it moves between systems. Risks can also be assigned (as with any component in S3E). States³ can also be assigned. S3E is also able to show the relationship between data entities.

Impact Assessments

S3E provides a comprehensive view of change by allowing users to run various scenarios. Whether a server, a technology, a business unit, a data entity – or any one of 14 different components, users can determine the impact of change. If a data entity impact assessment is run, the summarized report provides all the key information that relates directly to that data entity. Including – description of the data entity, its security classification, its entity type, its mastered technology, internal ownerships (i.e. business, technology, process), tags, its data attributes, where it is used in interactions, its CRUD profile, its geographic footprint and associated risks.

For those in governance, being able to run scenarios to understand what risks may be present, allows for mitigations to be added to any project plan or change request. This is particularly important when planning data migrations as part of a technology replacement / upgrade or when considering data as part of your organisation’s security posture.

Summary

S3E enables organisations to understand their data – end-to-end. From where it originates (i.e., its creation to master system), how it is classified (i.e. PII, financial etc), who uses it (i.e. business units and roles) for what purpose (i.e. business activity) and how (i.e. business activity flows). This view supports a wider data governance framework by ensuring visibility of data as it is within your organisation, as well as understanding the impact of changes to it - all in a practical and user-friendly way.

Definitions

Business Activities	A business activity refers to any action or process that is performed by a business or organisation to achieve its goals. Business activities can include production, marketing, sales, customer service, and financial management, among others.
Business Location	A business location is a physical site where a business or organisation operates. This can include a headquarters, branch office, manufacturing plant, or retail store. This could also include a location for hosting infrastructure with a third party (e.g. AWS, Azure)
Business Owner	This subject matter expert (SME) will have responsibility for the management of their department / business unit. It is understood that they may have ultimate accountability for commercial relationships.
Business Process Flow	In S3E a Business Activity Flow portrays a process that is followed to produce an end result. The Business Activity Flow identifies manual and automated areas of a process.
Business Roles	We use roles to articulate who does what in a BPF and which corresponding BU is for that task.
Business Unit	Team or a department within a business, company or organisation that provides a service(s) or function that contributes to the daily running of a business
Data	Data refers to factual information (such as measurements or statistics) used as a basis for any reasoning, discussion, or calculation
Data Entity	Data Entities are the objects of a data model such as Customer or address. Entities don't represent data themselves but are containers for attributes and relationships between objects.
Data Attribute	EntityA characteristic property of a data entity.
Data Stewardship	A data steward describes the relationship to data and is not a position. Therefore, anyone in a business unit with a relationship to understanding data could be a data steward. A person working as a data steward may assist with defining the classification of data, support the process of determining the fitness of data for the purposes it was intended, written and maintain policies relating to data.

Domain Steward	A domain steward would have responsibility for the running of their department (see Business Owner). This could be the head or GM of the business unit.
Integrations	In S3E integration is the display of how two or more separate entities or systems interact to share data or provide communication with each other
Interactions	A single set of steps involving people, technologies and data to achieve an outcome. The How between four types of interaction. People to People, People to Tech / Tech to People and Tech to Tech.
Organisation	An entity or group of entities that provide services to produce a profit or a non-profit organisation provides services to assist in improving lives and society.
Process owner	This subject matter expert (SME) can understand the processes utilized by their department / business unit. They may also understand the data used across these processes.
Technology Owner	This SME is responsibility for the line of business technology (or system) they are associated with.

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