

## Data Ownership Studies through Field Examples:

### (1) Exchange of Work Progress Data in Made-to-order Manufacturing



**Advanced Study Group  
on Data Sovereignty (ASG-22)  
IVI**

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- 1. Introduction: About this document**
- 2. Exchange of Work Progress Data in Made-to-order manufacturing**
- 3. Acknowledgements**
- 4. Authors and Advanced Study Group Members**

# 1. Introduction: About this document



This document presents the discussions and deliberations of the Data Sovereignty ASG, Advanced Study Group, regarding data ownership and description in specific examples.

The importance of data utilization in manufacturing is widely recognized, and government measures such as Connected Industries are being promoted, but the lack of accumulation of data contracting practices has been identified as an issue.

In response, IVI organized the Data Ownership Committee in 2017 and began activities aimed at protecting the rights of shop floor data (IVI named it “deep data”) in the IoT era. This committee was reorganized into the Data Ownership ASG in 2018, which later became the Data Sovereignty ASG in 2021 to develop and continue its activities.

In order to realize higher value in connected manufacturing in the IoT era, it is important to be able to negotiate, judge, and realize ownership of deep data appropriately according to the business environment of each company. This document is the result of discussions and examinations conducted by the parties concerned, and is expected to contribute to the expansion of recognition of data ownership, activation of discussions, and better realization of data ownership.



# 1. Introduction: About this document



To promote the utilization of *deep* data while protecting the rights of deep data, IVI has conducted a hearing survey on the current status and issues of data ownership and solutions for data transfers between companies, and has published it as a white paper<sup>※</sup>.

※ IVI Data Ownership ASG “current status and issues of data ownership and solutions for”; Sept. 2019  
[https://iv-i.org/downloads/whitepaper\\_asg/](https://iv-i.org/downloads/whitepaper_asg/) (in Japanese only)

In addition to the above efforts, examples of data ownership studies in specific cases are considered to be helpful for implementation by those in charge of the field. Therefore, this document presents the contents discussed in the Data Sovereignty ASG, together with its description.

We hope that this document will be used as a reference for promoting understanding of the concept of data ownership in the field, sharing understanding with legal and intellectual property departments and information-related personnel, and considering and negotiating data ownership and its implementation in data trading platforms when companies actually decide to exchange data in the field. We hope you will find this document useful. Please note that this document is a summary of the discussions at the Data Sovereignty ASG and we are not responsible for any actions taken by users using this document.



## 2. Exchange of Work Progress Data in Made-to-order Manufacturing



This section describes the results of the following two IVI's smart manufacturing business scenario working group projects:

- ✓ 6E02 "How to Connect for Mass Customization" and
- ✓ 7E03 "Affordable data collaboration for small and medium-sized manufacturing companies".

Reference:

IVI Open Symposium 2021 -Spring-

<https://iv-i.org/en/2021/02/28/english-announcement-of-ivi-open-symposium-2021-spring/>

IVI Open Symposium 2022 -Spring-

<https://iv-i.org/en/2022/02/23/english-information-on-ivi-open-symposium-2022-spring/>



## 2.1 Target Situation

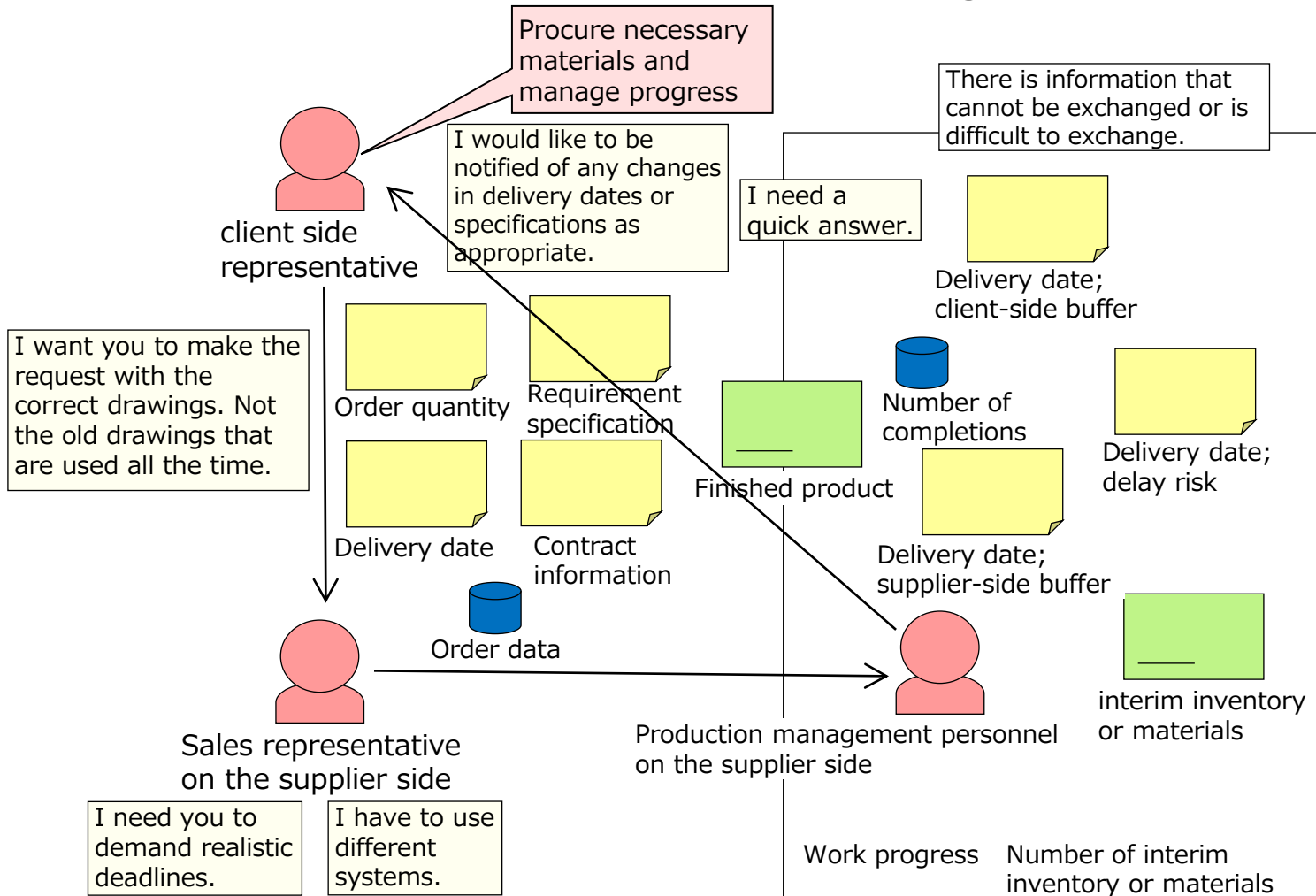
### Target Sites :

- ✓The target companies are Manufacturer A, a make-to-order manufacturing company, and its component suppliers.
  - ✓The supply chain is multi-tiered.
  - ✓In some cases, Manufacturer A provides free-issue components / assemblies to its component supplier.
- ✓The manufactured product is a custom product with a delivery time of more than one year.
  - ✓Forecasts are made with standard lead times, but there are no precise estimates at the beginning.
  - ✓Once a plan is established, each company makes adjustments to refine the plan.
- ✓It is not simply a matter of making products as quickly as possible (Just-In-Time:JIT may be preferred to overcome storage space issues).
- ✓The situation may change during the production process due to changes in delivery dates from final customer, tight supply of materials, and so on.

# 2.1 Current Issue

- ✓ Manufacturing progress information between companies and factories is not obtained in a timely manner with good accuracy.

## Chart of exchange; As-Is



## 2.2 Exchange Data to overcome issues



### **Purpose of data exchange:**

- ✓ Delivery date confirmation, i.e. which parts are to be shipped, when and how many, in a timely and accurate manner. Supplier wants to know which parts are to be wanted, when and how many, in a timely and accurate manner.
- ✓ Adjust production priorities.
- ✓ Facilitate JIT supply of finished products, parts/materials and free-issued parts.

### **Data to be exchanged:**

- ✓ Requirements, progress data and inventory data
  - ✓ Consider exchanging data between two companies for simplification.



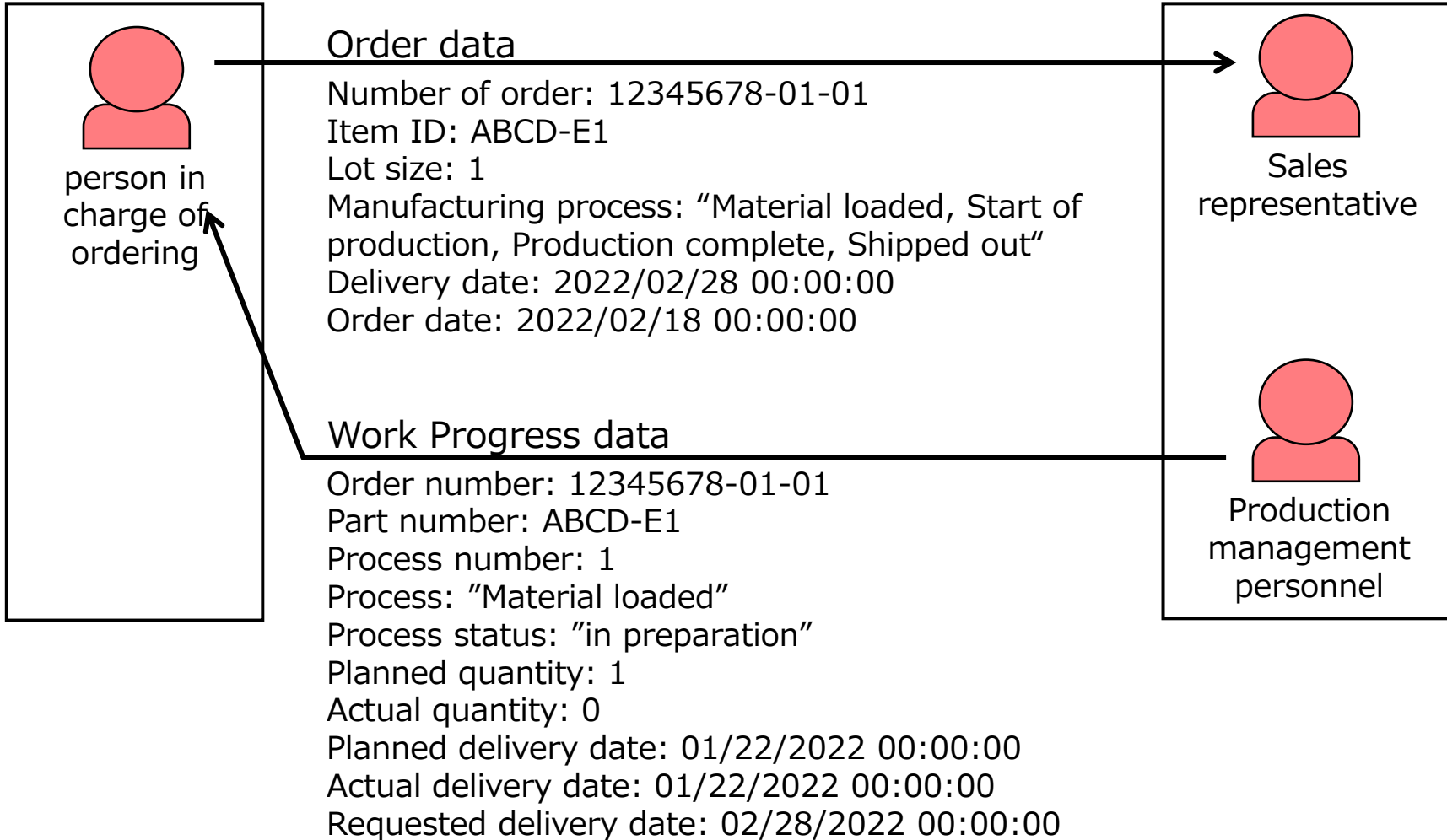


# 2.2 Examples of data to be exchanged



Client company A

Supplier company B



## 2.3 Considering data ownership



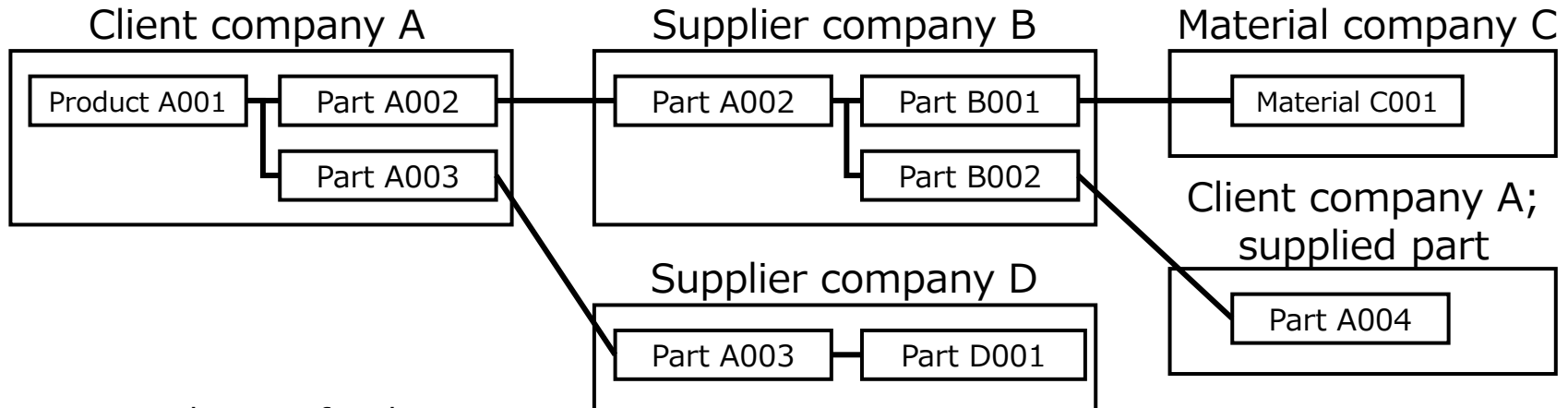
1. The data shall be referenced only by the two companies that transfer the data (i.e., the received data shall not be provided to any other company). Since there are advantages or disadvantages in narrowing or widening the reference range, this study assumes a narrower case in order to reduce concerns\* such as use for other purposes in data sharing.
  - If the scope of reference is narrow, the company's data will be referenced only by those with whom it has a direct order-receipt relationship, thereby reducing the risk that the company's order status or production capacity will be guessed.
  - If the reference range is wide, it is easier to infer the cause of progress delays and to adjust production plans.
2. Immediate transmission of updated data shall not be committed.
3. The scope data exchange shall be determined by the two companies that exchange data.

\* IVI data ownership ASG "Data Ownership Status, Challenges and Solutions ", Sept. 2019

[https://iv-i.org/downloads/whitepaper\\_asg/](https://iv-i.org/downloads/whitepaper_asg/)



## 2.3 Considering data ownership



Person in charge of ordering at company A does:

- enter order information of part A002 and A003
- receive and refer to the order progress of parts A002 and A003 from Company B and Company D, respectively.

For example, if the process "material arrival" for part A002 is not completed beyond the scheduled time, we can guess that "material arrival for part A002 is not in progress"; we can not guess whether the arrival of parts B001 or B002 is in progress.

Sales representative and production management personnel at company B does:

- refer to the order information for part A002.
- enter the order progress for part A002.

If Company A changes its delivery request for A002 due to a change in the delivery date of product A001 or a delay in the progress of part A003, Company B can also adjust its priority for A002 production.

It is not possible to refer to the order progress of Company D; it is impossible to even know that Company A has placed orders with Company D. The reverse is also true.

We would like to express our sincere appreciation to the members of the smart manufacturing scenario WG. The smart manufacturing scenario are the subject of our study for the preparation of this documents.

### **Judging the quality of high-speed precision press work**

- ✓ WG 6E02 " How to Connect for Mass Customization "
- and
- ✓ WG 7E03 " Affordable data collaboration for small and medium-sized manufacturing companies ".

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## **Data ownership and its description in specific examples**

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