



SOLVE. ENCODE. MAKE.

PHENOME BY OBJECT

Digitalisation service and open platform for manufacturing companies

Object maps a manufacturing company, designs the systems it lacks, builds or connects them, verifies them and monitors them in operation.

<https://phenome.object.pl>

<https://object.pl>

October 2026

Phenome: a consulting service and a platform of modules with published contracts

Object sells Phenome as a service for digitalising manufacturing companies, and the platform is the set of modules that the service deploys.

The service

Consultants map the company's present state and choose the gaps that cost it most. Object then builds or connects the modules that close those gaps, verifies them and watches them in operation.

The platform

Each module fills one role and speaks that role's published contract. A system the company already runs can fill a role too, through an adapter.

 The first phase of a deployment goes live on its own, beside the systems that stay.

Engagement in five stages, each closed by a decision of the company

A stage ends when the people named for it accept its result. The method is in development and has not yet been measured on an engagement.

STAGE	WHAT HAPPENS	WHAT THE COMPANY DECIDES
1 Mapping	Object interviews the people who do the work and builds the company map.	People who do each process confirm that its model is right.
2 Design	Each gap gets a cost in the company's own measures, and a deployment plan names what fills each role.	The company chooses which gaps the first phase closes.
3 Build	Modules come at a released version, and adapters to the company's systems are written for this deployment.	The company decides which AI, if any, may see its data.
4 Verify	Each module and adapter runs the conformance tests of its role, which are in development.	The company decides when a verified phase goes live.
5 Monitor	A monitor, also in development, collects what each contract promises to report.	The company decides what the next phase covers.

Company map: seventeen parts, kept in the company's own repository

Mapping covers far more than processes. Processes and hand-overs are modelled as diagrams, and every other part is a register in which each row names its source.

Processes

An as-is model with makigami stories covers the processes that matter.

Business model

Goals

History and planned future

Organisation and roles

Competences

Sites

Machines and other assets, including the vehicle fleet

Systems and databases

Infrastructure

Products

Suppliers

Customers

Obligations: standards, certificates, regulations

Indicators

Risks

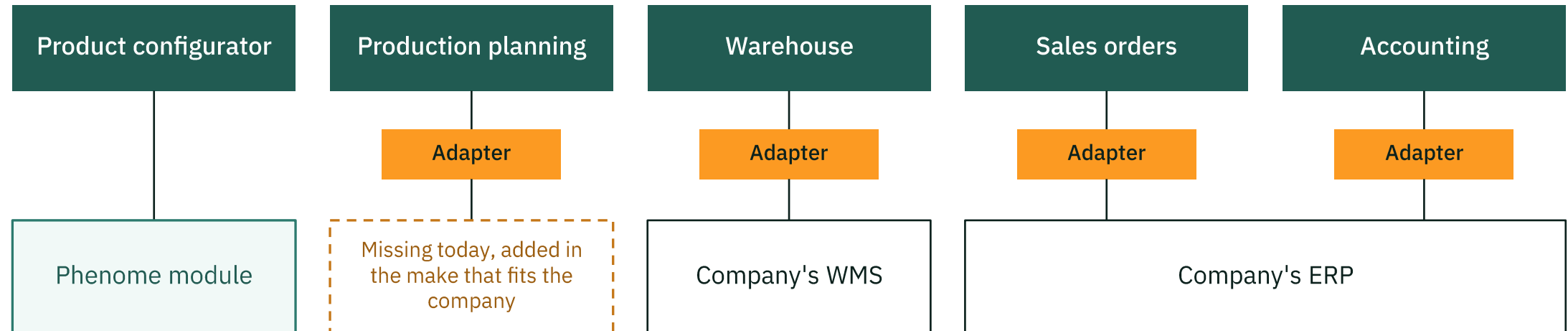
Data

Registers hold kinds and counts, and personal data stays out of them.

Existing systems keep their roles behind adapters to published contracts

A system the company runs keeps its role and gets an adapter to that role's contract. A missing system of any kind and make is added through the same contract.

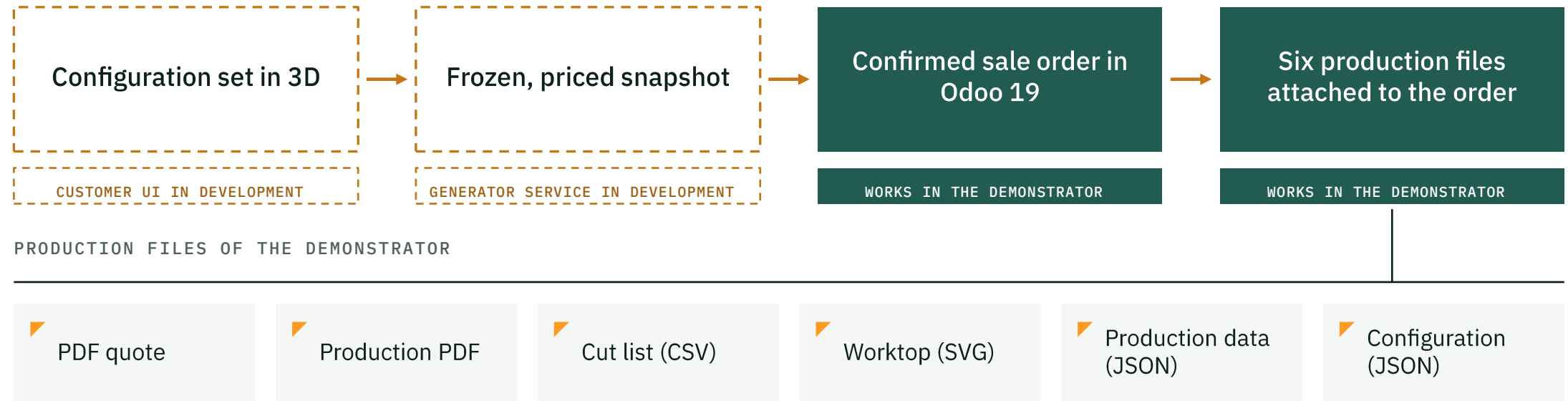
ROLES WITH PUBLISHED CONTRACTS



The roles in this example are illustrative; a real deployment takes its roles from the company map. In the example the company's ERP fills two roles through two adapters.

Configurator phase: one computed variant feeds the quote, the order and six files

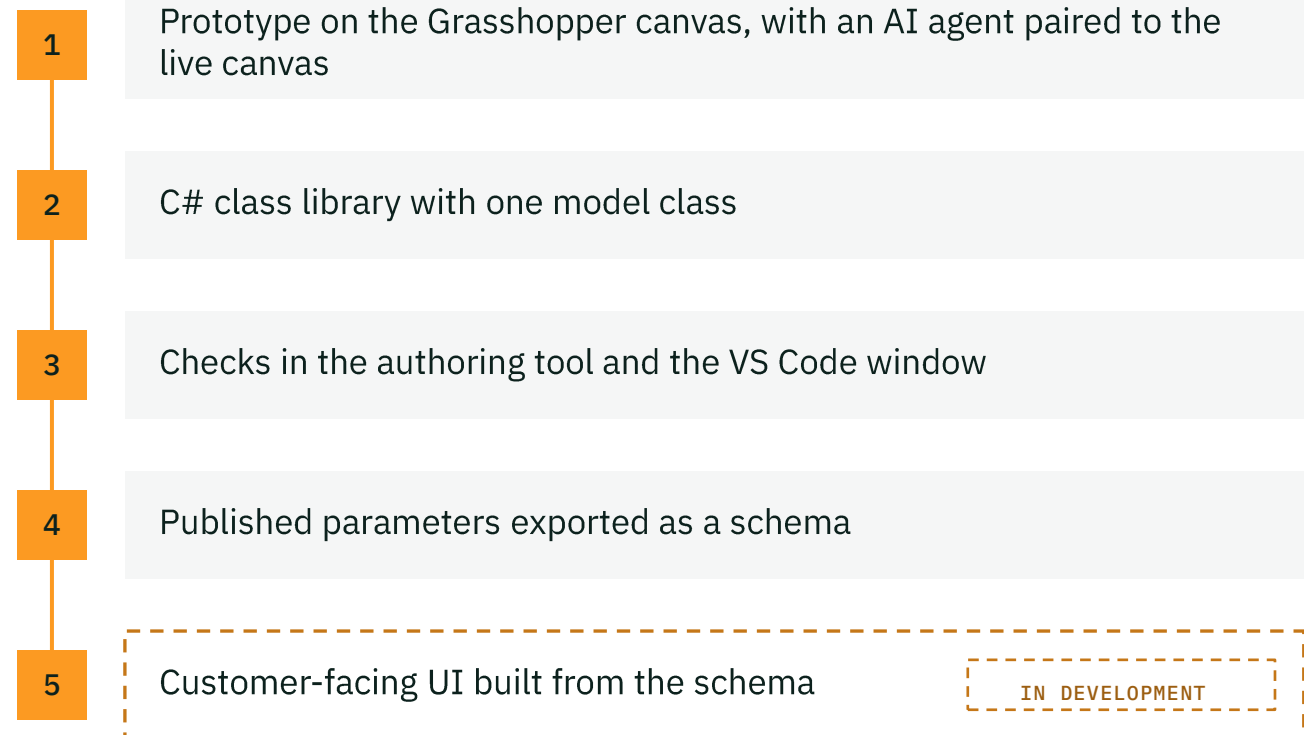
The 3D product configurator is the first phase offered, because 3D is Object's strongest competence.



The demonstrator imports a frozen configuration into Odoo 19 as a confirmed sale order with these six files. A repeated import of the same configuration creates no second order.

Configurator authoring: Grasshopper prototype, C# model, published parameters

A tool builds a configurator, runs it and reports its whole state. A VS Code window shows the model tree with its parameters next to the 3D view.



571

automated tests cover the geometry kernel.

136

tests cover the configurator apps.

132

tests cover the authoring libraries.

Status of each part of Phenome on 19 October 2026

Each part in the right column is in development and is labelled that way on every slide.

WORKS TODAY

Geometry kernel

The C# kernel for .NET 10 runs on servers and in the browser, with 571 automated tests.

Configurator authoring

Configurators are built and checked in a VS Code window.

Grasshopper prototyping

An AI agent works on the live canvas together with the engineer.

Order demonstrator

Odoo 19 receives a frozen configuration as a confirmed sale order with six production files.

NURBS in the browser

The solid modelling library weighs 1.1 to 1.4 MB compressed and computed a boolean test model in about 0.3 s.

Process modelling

An OPM tool (ISO 19450) for VS Code validates models and shows makigami stories.

IN DEVELOPMENT

Generator service

It freezes a configuration into a priced snapshot on the server.

Customer-facing UI

It is built from the published schema and embeds in a web page or a shop.

Agent kit

Any AI agent builds configurators under the same checks as hand-written code.

Conformance tests and monitoring

Each module role gets its tests, and a running deployment gets a monitor.

Consulting method

It has not yet been measured on an engagement.

Open parts: MIT geometry kernel,
MIT canvas link and an open
contract handbook

The MIT licence lets anyone use and modify these parts, including in commercial work.

Handbook of contracts between the modules of a manufacturing company

32

RESPONSIBILITIES

24

BOUNDARIES

The handbook maps 32 responsibilities and 24 boundaries to existing standards such as ISA-95 and OPC UA. It is a draft at version 0.2 and is to be published under MIT.

Geometry kernel

The kernel is published on GitHub under MIT.

<https://github.com/theObjectCo/PhenomeKernel>

Phenome Link

The Grasshopper plugin that pairs an AI agent with the canvas is public on GitHub under MIT.

<https://github.com/theObjectCo/Phenome>

AI in an engagement: optional at every stage, with the company choosing the model

Where an AI model sees the company's data, the company decides which model may do so. Without AI the stages run the same way.

Mapping

An AI agent drafts process models from interview notes, and each element of the draft points back to a note.

IN DEVELOPMENT

Prototyping

An AI agent works on the live Grasshopper canvas beside the engineer.

WORKS TODAY

Building

The agent kit lets any coding agent or chat assistant build configurators, and the result passes the same checks as hand-written code.

IN DEVELOPMENT

Industry 4.0 and 5.0, defined as properties a deployment can be checked for

Both terms are used here only in the sense below, and each sentence can be checked on a running deployment.

4.0

- Data passes between systems through contracts, with no retyping, exports or e-mail.
- A product variant is computed once, and the same data feeds the quote, the order and the production files.

5.0

- People stay in the decisions: an exception goes to a named role and is never accepted by default.
- Any system can be replaced without rebuilding the rest.
- Nothing in the platform forces a company onto one vendor.

First phase: what the company provides and what it receives

Timings are estimates until the first engagements measure them, and this deck quotes none.

The company provides

- The company names people for interviews, both those who do the work and those who decide.
- It lists the systems in use, including spreadsheets and shared folders.
- It shares three recent orders of different kinds, ideally including one that went wrong.
- It decides which AI, if any, may see its data.



The company receives

- The company map stays in the company's own repository.
- A gap list gives the cost of each gap, and a deployment plan names what fills each role.
- The first phase goes live on its own, beside the systems that stay. In a configurator-first engagement it is a 3D configurator connected to the company's ERP through an adapter.

Limits of Phenome and of its first engagements, as of October 2026

These limits hold for every offer made on the basis of this deck.

1

Phenome is not an ERP and does not replace one. It connects to the ERP a company has, or adds one.

2

The first engagements are configurator-first. Planning, quality and service are mapped and designed with the same method, but fewer modules for them are ready today.

3

The consulting method has not yet been measured on an engagement, and every timing is an estimate until it is.

4

The generator service, the customer-facing UI, the agent kit, the conformance tests and monitoring are in development.

NEXT STEP

A mapping workshop at the company

At the workshop, Object and the company choose the areas the problem touches and one person per role in each. The result is the interview plan for the mapping stage.

Contact goes through <https://object.pl>, and Phenome is described at <https://phenome.object.pl>.