

## PHENOME • ENGAGEMENT BRIEF

# A Phenome engagement: what a manufacturing company can expect at each stage

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## WEBSITE

<https://phenome.object.pl>

Phenome is a system for mapping, designing, building, verifying and monitoring the IT systems of a manufacturing company. Object runs engagements as a service, in which its consultants choose platform modules for the gaps that cost the company most. The method is in development and has not yet been measured on an engagement.

| STAGE         | WHAT HAPPENS                                                                                                                                                          | THE COMPANY PROVIDES                                    | THE COMPANY RECEIVES                                                                                                                                                                                                                                                                                     | DECISION AT THE END                                                           |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. Mapping    | Consultants interview staff area by area. Each note records the speaker's role and the date.                                                                          | People's time for interviews and for reviewing the map. | The company map, in its own repository: processes in OPM with makigami stories, business model, goals, history and plans, organisation, competences, sites, machines and the vehicle fleet, systems and databases, infrastructure, products, suppliers, customers, obligations, indicators, risks, data. | Each process is confirmed by a person who does that work.                     |
| 2. Designing  | The map is compared with the catalogue of module roles. Each gap is costed in hours, errors or lost orders, and modules are chosen for the most expensive ones first. | A decision-maker.                                       | A gap list, a to-be model and a deployment plan that names what fills each role, the adapter, the contract version and the phase.                                                                                                                                                                        | The decision-maker approves the first phase, which has to go live on its own. |
| 3. Building   | Modules enter at released versions. Adapters are written against the contracts of their roles.                                                                        | Access to the systems that are to be connected.         | Adapters kept in the company's repository, and platform modules at released versions.                                                                                                                                                                                                                    | The tests of stage 4 decide whether the work moves on.                        |
| 4. Verifying  | Every module and adapter runs the conformance suite of its role, the replacement test included (in development).                                                      | —                                                       | A test report for the phase.                                                                                                                                                                                                                                                                             | The company decides when the verified phase goes live.                        |
| 5. Monitoring | The monitor collects what each contract promises to report (in development).                                                                                          | —                                                       | Observations and reported deviations.                                                                                                                                                                                                                                                                    | A deviation opens a new design round.                                         |

## WHAT THE COMPANY KEEPS

Systems that fill their roles acceptably stay in place and get adapters; a missing system is added through the same contract, from whichever vendor suits the company. The map, the notes, the deployment plan and the adapters stay in the company's repository and never go to a public one.

## WORKING TODAY

- The geometry kernel is written in C# for .NET 10, has 571 automated tests and public code under the MIT licence, and runs on servers and in the browser as WebAssembly.
- A configurator is a C# class library with one model class. A tool builds it, runs it and reports its whole state, and a VS Code window shows the tree, the parameters and a 3D view. These tools have 136 tests, and their libraries another 132.
- Prototypes are sketched in Grasshopper, with an AI agent working on the engineer's open canvas through Phenome Link, which is public under the MIT licence.
- A demonstrator imports a frozen configuration into Odoo 19 as a confirmed sales order with six files: a PDF quote, a production PDF, a cut list in CSV, a worktop drawing in SVG, production data and the configuration in JSON. A repeated import does not create a second order.
- A NURBS solid modelling library compiled to WebAssembly takes 1.1 to 1.4 MB compressed and computes a boolean test model in the browser in about 0.3 s.
- The OPM (ISO 19450) modelling tool runs as a VS Code extension with validation, makigami stories and process views.
- The open handbook of contracts between modules, draft 0.2, maps 32 responsibilities and 24 boundaries to standards such as ISA-95 and OPC UA and is to be published under the MIT licence.

## IN DEVELOPMENT

- A generator service will store a frozen configuration with its price on the server.
- The customer-facing configurator UI is being built from the schema of published parameters and will embed in a web page and an online shop.
- An agent kit will let any AI agent build configurators, and their code will go through the same verification as hand-written code.
- Conformance suites for module roles and a monitor for running deployments are being built.
- The consulting method is being built: an interview guide, process models drafted by AI from interview notes, gap analysis and phased deployment.

## LIMITS

Phenome is not an ERP and does not replace one. It connects to the ERP a company runs, or adds one where there is none.

The first engagements start with the 3D product configurator. Planning, quality and service are mapped and designed with the same method, but fewer modules for them are ready today.

AI can be left out of every stage. The company decides which AI model may see its data. Stage durations remain estimates until the first engagements measure them.

## CONTACT

Engagements are arranged through <https://object.pl>. The stages and the platform are described in full at <https://phenome.object.pl/en/>.