



Unlocking AI Across the **Actuarial Product Lifecycle**

Actuaries and Agentic AI in Actuarial Product Development



Welcome

Actuaries and Agentic AI in Actuarial Product Development

Life insurance as the example – migration of existing tariffs and new business



YOUR SPEAKER · MSG LIFE AG

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Objectives and Agenda

01

Challenges & Opportunities

Where effort arises today · Where agentic AI comes in

02

Solution

AI building blocks · Product Information Hub · Approach (Build)

03

Trust & Guardrails

What we do not automate · How we safeguard

04

Live

The (prototype) platform and its artefacts · Summary

Objectives of this talk

- 1 The actuary back at the centre** – independent of specialised IT know-how
- 2 A transparent process** modelled on software development
- 3 One tool** – prototype covering the whole process

01

Challenges & Opportunities

Where effort arises today · Where agentic AI comes in

Where effort, time and risk arise today

Knowledge in people's heads and legacy documents

Technical notes, technical business plans, legacy system source code

→ Dependence on a few key experts, long onboarding

Breaks in the chain

Requirement → specification → code → test → documentation

→ Translation losses, rework, inconsistencies

Heterogeneous tariff landscape

Many tariff generations, special provisions, legacy burdens

→ Migration becomes case-by-case work; standard imports only cover uniform tariffs

Testing and acceptance

Manual comparison calculations, limited case coverage

→ High effort, residual risk, hard to audit

Downstream documentation

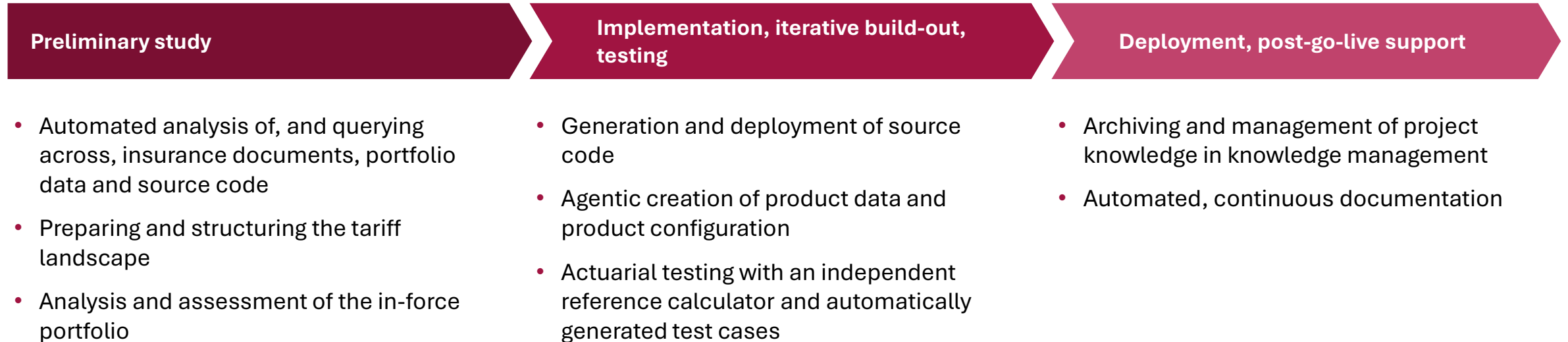
→ Often outdated at go-live, high audit and internal-audit effort

Complex tools

→ Business experts need IT as translators, long iteration cycles

Core challenge: what is expensive is not the calculation itself, but the **translation** between business logic, system and evidence.

Where agentic AI comes in along the product lifecycle



Applies to both scenarios: **migration** – reconstructing knowledge from legacy systems – and **new business** – designing new tariff generations.

02

Solution

AI building blocks · Product
Information Hub · Approach (Build)

Three building blocks – and why they belong together

1

Knowledge Management

Product knowledge, centrally available

- From a simple chatbot to an integrated, domain-specific assistant
- Source-based: every answer with its origin; connected to external applications such as ticketing or policy administration

2

Agentic AI

Automating the processes

- (Semi-)autonomous agents support the entire engineering process
- The agents draw on knowledge management
- Open standards: **MCP** (agent ↔ tools and data), **A2A** (agent ↔ agent)

3

Neuro-symbolic AI

Representation of product knowledge

- Agents **understand and formulate**; a knowledge graph (KG, symbolic) **stores rules and structure**
- Symbolic memory and rule repository – one source of truth for every tariff
- Particularly suited to deep, rule-bound domains such as tariff design

Neural for language and design, symbolic for **correctness and traceability**.

The building blocks combined in one platform

CORE PRINCIPLES

- 01

Business experts at the centre
The technology sits behind AI assistants and a clean interface; no source code or database skills required.
- 02

One hub, many consumers
Tariffs are maintained once and used by policy administration, sales and portal systems.
- 03

Audit-ready by design
Every change with snapshot, timestamp and user ID

MODULES

	Tariff Manager (KG)	Where tariffs live: create, edit, approve
	Calculation Engine	Calculates actuarial values according to defined calculation rules
	Tariff Agent	AI assistant for research in the knowledge graph and maintenance of calculation rules and product configuration
	Calculation Agent	AI assistant that explains and develops calculation rules and generates executable code for the calculation engine
	Develop Agent	Overarching AI assistant that guides users through tariff development in a structured way

 rule-based

 AI assistance

From idea to approval – a build process modelled on software development

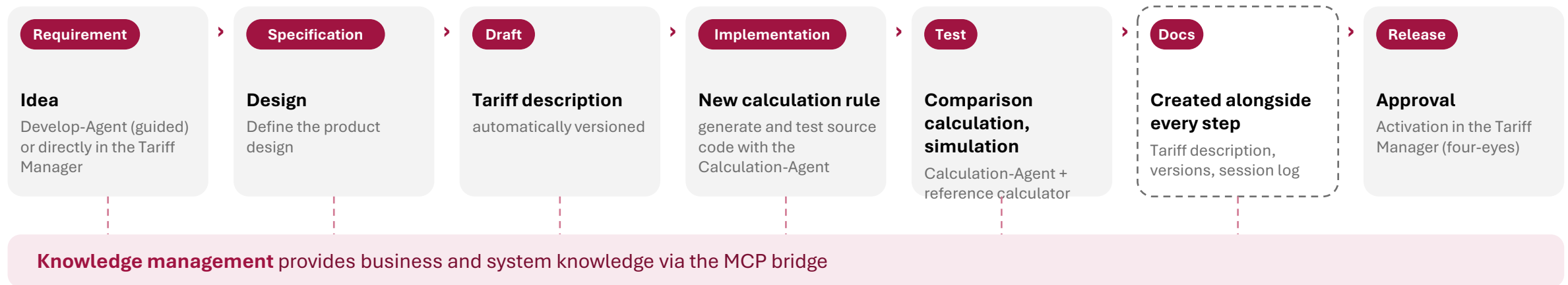
The classic process – requirement → specification → code → test → documentation – has **weak points at every hand-over**.

Agentic development **closes the gaps**: a business change flows coherently through specification, code, test and documentation.

What adds value is not just the generated code but the **traceable end-to-end consistency** – which is also the **evidence** for the auditor.

This applies equally to **software engineering** and **product development**: both are build processes.

Humans-in-the-loop steer the process chain · **AI agents** support every single step



03

Trust & Guardrails

What we do not automate · How we safeguard

What we do not automate – and how we safeguard it

RISK	MITIGATION
Hallucination The language model invents values or relationships	AI only makes proposals; the tariff calculates deterministically, the reference calculator recalculates
Common-mode errors Tariff and test derive from the same source	Expected actuarial results from independent sources (technical note, legacy system, manual calculation)
Model version change The same dialogue leads to a different result	The accepted tariff is versioned and sealed; the session log documents the path
Manipulated or incorrect sources e.g. web content with hidden instructions	Origin of every actuarial basis visible; external sources only as proposals, decision rests with humans

Regulatory framework

- **EU AI Act:** Risk assessment and pricing for natural persons in life and health insurance are classified as high-risk. However, AI systems used solely for preparatory tasks within the development process, where final decisions are made by humans, **are not classified as high-risk**.
- **EIOPA Opinion (Aug 2025):** For AI that is neither prohibited nor high-risk, EIOPA expects proportionate governance and risk management, including documentation, explainability and human oversight.
- **Supervisory roles:** The Responsible Actuary (§§ 141/156 VAG), actuarial function (§ 31 VAG) and IDD product oversight and governance remain key elements of the insurer's governance framework, but do not replace separate AI Act and DORA obligations.

Not automated: Acceptance and approval – AI proposes, humans decide and remain accountable.

04

Live

The (prototype) platform and its artefacts

● LIVE

- ✓ The actuary speaks in **their own** language – the agents handle the translation into the system
- ✓ Every actuarial basis shows its **origin** and **derivation**, not just its value – and can be changed in the tool
- ✓ Every formula is described in business terms, reusable and computable in the tool; the code is generated
- ✓ Approval, sealing, audit trail and **log** are part of the tool, not a downstream step
- ✓ The **artefacts are created along the way**: user manual, session log, specification
- ✓ The product model and agents **reduce complexity** compared with today's tools
- ✓ **Automated product configuration by agents** and an **integrated reference calculator** for acceptance

TAKE-AWAY

AI proposes design, the rule set calculates, the reference calculator verifies – and humans decide.

Three objectives – what this talk has shown

1

The actuary back at the centre

Actuarial work first – IT know-how second

- Actuaries work in **their own language**; AI assistants translate into the system
- **No specialised IT know-how** needed – no code, no databases
- AI prepares – the actuary **decides and remains accountable**

2

A transparent process

Modelled on software development

- Every step from idea to approval is **visible, versioned and traceable**
- A large part of product development is software development – its proven build process applies
- Also applicable to the **non-software parts**: design, pricing, acceptance, approval

3

One tool for the whole process

Product Information Hub (prototype)

- Knowledge management, agents and rule set **combined in one platform**
- Design, calculation, testing, approval and documentation **in one place**
- Prototype today – **transferable** to profit testing, Solvency II and ALM

Actuaries work in **their own language**, along a **transparent build process**, in **one tool** – AI prepares, the actuary decides.