EMMA Payroll

Phase 1 Summary Report
Prepared by: Allan Bolton

Executive Context

As part of the EMMA initiative, **four agentic prototypes** were developed to explore how AI-based agents could address concrete operational challenges identified during the consultancy period.

EMMA Payroll is one of these four prototypes. Its focus is payroll operations, specifically the **analysis and explanation of overtime payments**—an area consistently identified as a source of operational friction and high workload.

This report summarizes the findings, opportunity, and functional prototype developed during Phase 1.

Scope of the Engagement

The scope of this phase was intentionally limited.

Phase 1 included:

- Investigation and problem framing
- Design of an AI agent–based approach
- Development of a functional prototype

This phase did not include production deployment, system integration, or rollout planning.

Investigation Approach

During the investigation phase, one-on-one discussions were conducted with payroll stakeholders and leaders.

The objective was to understand:

- The nature of payroll-related inquiries
- The effort required to resolve each case
- The causes behind recurring overtime questions

Current workflows and reliance on **Oracle HCM** for case analysis were also reviewed.

Key Findings

The investigation revealed a consistent pattern.

A significant portion of payroll tickets are driven by overtime payment questions.

Each case requires manual analysis in Oracle HCM, often across multiple periods, approvals, and cutoff dates.

The workload is amplified by:

- High daily inquiry volume
- Accumulated ticket backlogs
- Peaks around payroll dates

Resolving a single case frequently requires **over an hour of focused effort**.

Core Problem Identified

The core issue is not the absence of information.

> Relevant data exists in Oracle HCM.
>
> The challenge lies in calculating, validating, and clearly explaining how overtime payments are derived.

Payroll teams repeatedly reconstruct the same logic to determine expected outcomes and explain them to employees and managers.

Opportunity Area

The opportunity identified is to demonstrate how an AI agent built on Python code can reliably support this work.

Specifically, the prototype was designed to show how such an agent can:

- **Perform overtime-related calculations** in a deterministic and repeatable manner
- **Validate results consistently**
- **Provide clear traces** explaining how outcomes were produced

In the current prototype, inputs are simulated. In a future phase, the same capabilities could operate on real data from Oracle HCM, subject to internal validation and approval.

The underlying opportunity is to significantly reduce the time required per case, once calculation reliability and traceability are established.

EMMA Payroll — Prototype Overview

EMMA Payroll was developed as a **functional prototype**.

Its purpose is to demonstrate calculation, validation, and explanation capabilities, not to replace existing payroll systems.

The prototype uses simulated Oracle HCM–like data, while the calculation logic and execution are real. This allows the concept to be evaluated safely, without accessing production environments.

Key Capabilities Demonstrated

The EMMA Payroll prototype demonstrates the ability to:

- Model overtime scenarios based on Oracle HCM structures
- Calculate expected overtime payments using simulated multipliers
- Explain why payments fall into specific payroll periods
- Generate structured email summaries with clear explanations
- Track calculations and interactions for transparency and auditability

Intended Users

EMMA Payroll is designed for **payroll team members**, supporting those who manage the highest volume of repetitive and complex overtime-related cases.

Validation Activities

As part of Phase 1, the EMMA Payroll prototype was validated through direct engagement with leadership.

On **December 9**, the functional prototype was reviewed during a working session with the Emerson Costa Rica leadership team, where its capabilities and potential impact were discussed.

This session marked the conclusion of the Phase 1 validation activities.

Security and Governance Considerations

From the outset, EMMA Payroll was designed with enterprise governance in mind.

- **Python-based, auditable codebase**
- **Self-hostable tools**
- **Secure deployment options** (local or cloud)
- **No access to production systems**

All data and integrations used in the prototype are simulated for validation purposes.

Current Status

EMMA Payroll is currently a Phase 1 **functional prototype**.

It demonstrates technical feasibility and potential value, but it is not a production solution.

Next Phase Considerations (Out of Scope)

Potential next steps may include:

- Internal validation and approval processes
- Evaluation of integration with Oracle HCM
- Definition of a roadmap, effort estimates, and costs

These activities are outside the scope of Phase 1 and would require separate approval.