OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG

Zusammen die Welt *neu denken*

Simulation Project – Milestone II

Team A

Project Team & Responsibilities

Aakifah Hassan

Team Leader

Assumptions doc, corrections, report, final submission

Shashvat Sheth

Conceptual Model

Event identification, Petri net modelling

Basil Joseph

Input Data Analyst

Data inventory, field collection, distribution fitting

Harsh Chaudhary

Chief Software Architect

AnyLogic architecture, core implementation, KPI instrumentation

Ambaprasad Pathak

Experiment Designer

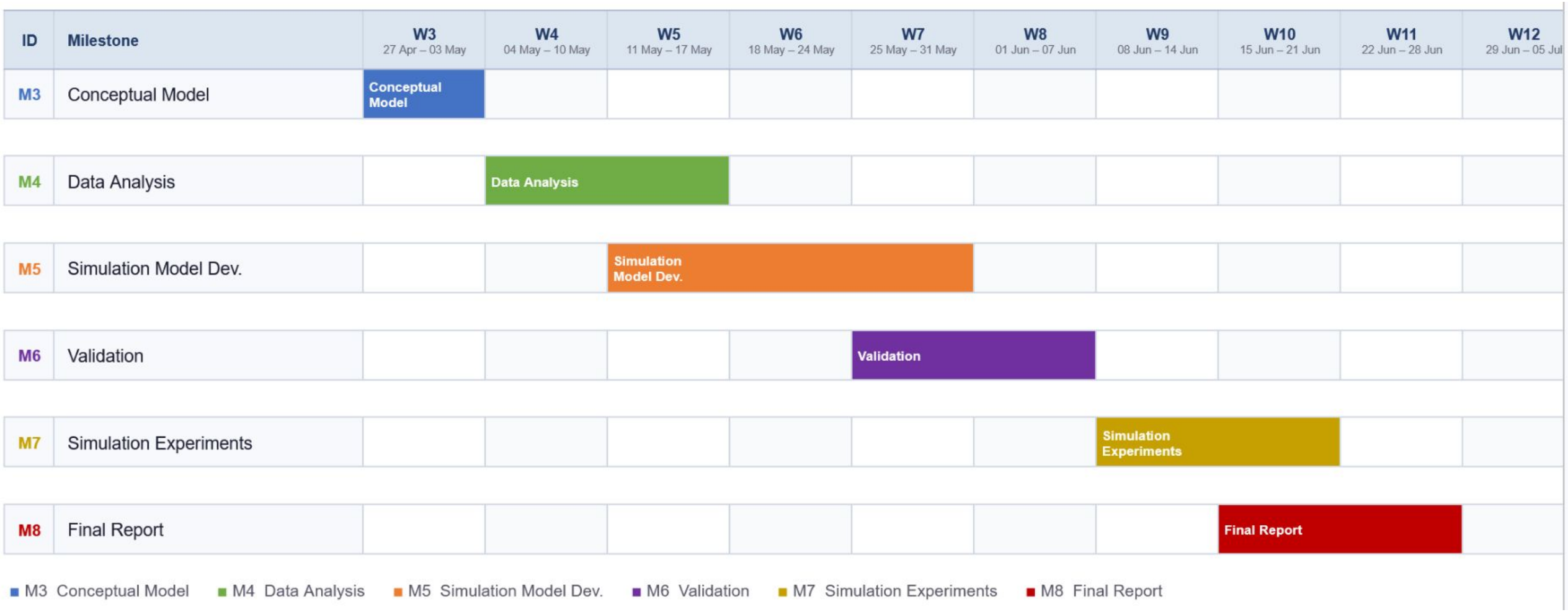
Experiment design, configuration, execution & analysis

Asif Majeed

Validation & QC

Debugging/verification, real vs. simulated comparison, plausibility checks

Milestone 2 · Project Schedule (27 Apr 2026 – 29 Jun 2026)



Milestone 3: Conceptual Model

Lead: Shashvat

28th April - 04th May 2026

3.1 System Analysis (~1 day)

Event Identification and structure mapping.

Shashvat & Harsh

3.2 Petri Net Modeling (2 days)

Formal representation of concurrent systems.

Shashvat

3.3 Assumptions & QoI (~1 day)

Defining quantity of interest and boundary conditions.

Shashvat & Basil

3.4 Experiment Design (~1 day)

Planning of simulation scenarios and parameters.

Shashvat, Amba & Basil

Milestone 4: Data Analysis

Lead: Basil

04th May - 18th May 2026

4.1 Data Requirements (~1 day)

Identification of core data needs for the model.

Basil

4.2 Inventory & Mapping (~2 days)

Source mapping and inventory management.

Basil

4.3 Field Collection (3 days)

Gathering data directly from field locations.

Team

4.4 Processing & Fitting (2 days)

Statistical fitting and data processing pipeline.

Basil

4.5 Validation & Quality (3 days)

Final assessment and quality control measures.

Basil & Asif

Milestone 5: Simulation Model Development

Lead: Harsh

15th May - 01st June 2026

5.1 Model Architecture (3 days)

Structural framework and component interaction.

Harsh & Shashwat

5.2 Traffic Logic Implementation (3 days)

Traffic behavioral rules and flow dynamics.

Harsh & Shashwat

5.3 Data & Output Metrics (3 days)

Collection of input data and measurement of performance indicators.

Harsh & Basil

5.4 Experiment Setup (3 days)

Final configuration for simulation experiments.

Harsh & Amba

Milestone 6: Validation

Lead: Asif

27th May - 08th June 2026

6.1 Real vs Simulated (~1 day)

Comprehensive comparison between empirical data and model outputs.

Asif + Aakifah

6.2 Validation Metrics (~1 day)

Selection of appropriate statistical indicators for model accuracy.

Asif + Basil

6.3 Plausibility Checks (2 days)

Conducting sensitivity analysis and behavioral logic verification.

Asif

6.4 Model Corrections (3 days)

Iterative error detection and technical refinement of the simulation logic.

Asif

6.5 Quality Assessment (2 days)

Final data validation and comprehensive quality assurance reporting.

Basil + Asif

Milestone 7: Simulation Experiments

Lead: Amba

09th June - 22nd June 2026

7.1 Parameter Adjustment (~2)

Fine-tuning variables and initial conditions for simulation accuracy.

Amba

7.2 Experiment Execution (3 days)

Running simulation scenarios and systematic data capture.

Amba+Harsh

7.3 Output Sensitivity Analysis (3 days)

Evaluating how variations in input impact final results.

Amba+Aakifah+Harsh

7.4 Results Analysis & Insights (~2 days)

Interpreting outcomes to derive actionable conclusions.

Amba+Aakifah+Harsh

Milestone 8: Simulation report

Lead: Aakifah

19th June - 29th june 2026

8.1 Report Writing (2 days)

Drafting comprehensive documentation of simulation methodology and results.

Aakifah

8.2 Presentation Preparation (~3 days)

Creating visual aids and narratives for final simulation walkthrough.

Aakifah & Shashvat

8.3 Review & Submission (2 days)

Final quality assurance, polishing, and official project hand-off.

Aakifah & Shashvat

Lessons Learned & Experience Gained

Lesson learned

- Producing a visual Gantt chart, this helped the whole team develop a shared mental model of the project
- Breaking down a complex simulation study into discrete, time-bound work packets to think systematically about dependencies.
- We deliberately scheduled work to begin slightly ahead of each milestone deadline, building in buffer time within each week to absorb unexpected delays or emergencies without derailing the overall project timeline.

Experience gained

- Experience estimating effort for a simulation study for the first time
- Team coordination experience : aligning 6 members on scope, roles, and timeline
- Experience translating a complex academic brief into actionable work packets

Estimate of Future Milestone Completion

M3 – Conceptual Model (~20% done)

Identified events and system, drafted initial experiment ideas, and defined KPIs.

M4 – Data Analysis (~10%)

Identification of required data sets is complete.

M5 – Simulation Program (0%)

Work has not yet commenced on this phase.

M6 – Validation (0%)

Verification and validation steps are pending.

M7 – Simulation Experiments (~10–15%)

Scenarios sketched during planning; design exists, pending execution.

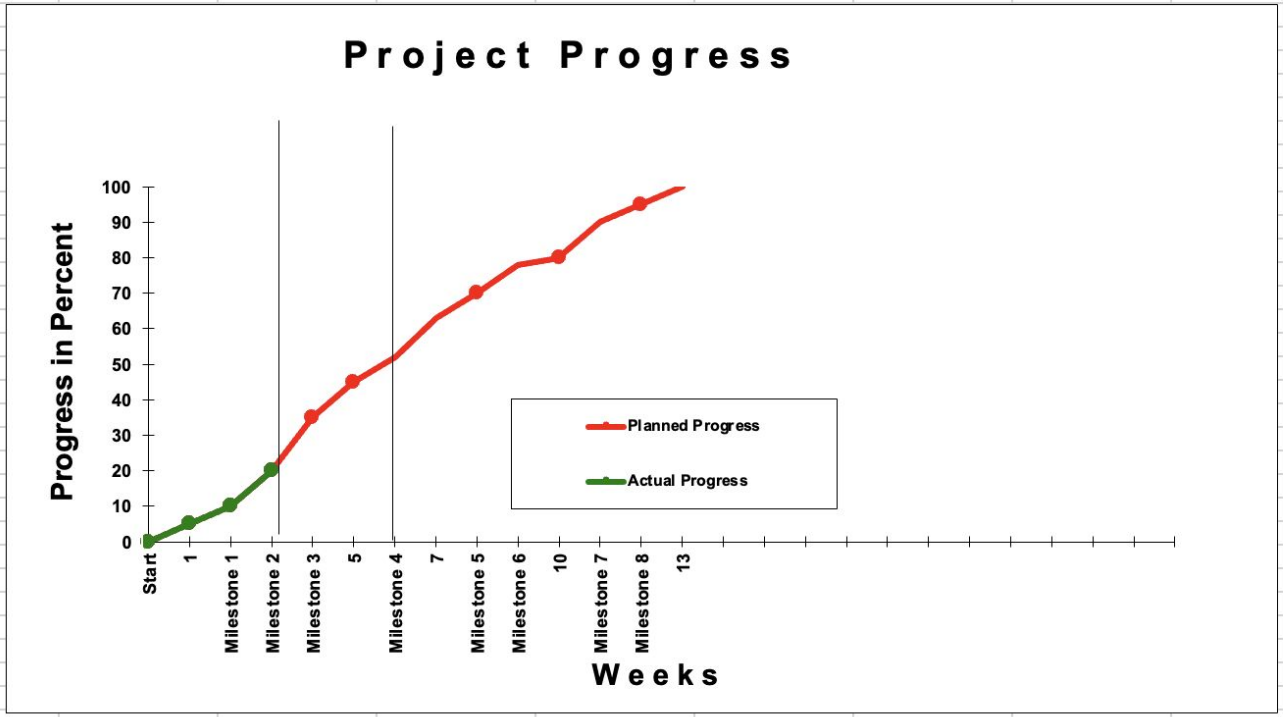
M8 – Final Report (~5%)

Project plan integration into the final reporting structure initiated.

Project Progress

Week	*Should*	*is*
Start	0	0
1	5	5
Milestone 1	10	10
Milestone 2	20	20
Milestone 3	35	
5	45	
Milestone 4	52	
7	63	
Milestone 5	70	
Milestone 6	78	
10	80	
Milestone 7	90	
Milestone 8	95	
13	100	

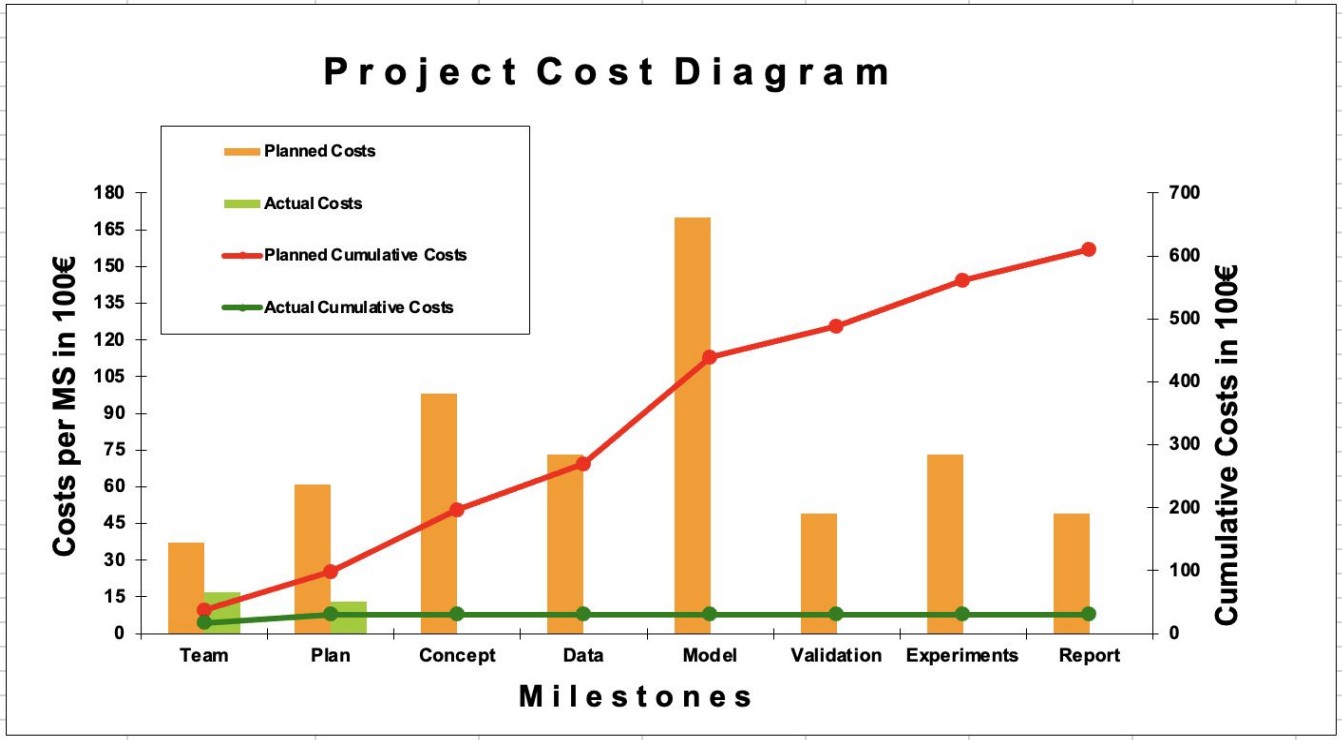
Planned Progress
Actual Progress



Cost Progress

milestone	*plan*	*actual*	*sum plan*	*sim actual*
Team	37	17	37	17
Plan	61	13	98	30
Concept	98		196	30
Data	73		269	30
Model	170		439	30
Validation	49		488	30
Experiments	73		561	30
Report	49		610	30
Total	610	30		

Planned Costs
Actual Costs
Planned Cumulative Costs
Actual Cumulative Costs



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Vielen Dank
für Ihre
Aufmerksamkeit