MadeManifest Calculation Engine
Engineer Onboarding README

Welcome to the MadeManifest Calculation Engine.

This project implements a deterministic calculation engine for:
• Astrology
• Human Design
• Gene Keys (derived from Human Design)

This is not an interpretation engine.
The system calculates exclusively objective, reproducible outputs based on birth data.
Read this document fully before you begin.

1. What You Are Building
You are building an engine that:
• converts birth data into astronomical positions
• computes astrological output
• computes Human Design Personality and Design activations
• derives Gene Keys output from Human Design
• contains no meaning, text, or interpretation

The engine is:
• deterministic
• test-driven
• decoupled from content and UI

If two people provide the same input, the output must be bit-exact.

2. What You Are Explicitly NOT Building
This project contains no:
• interpretation
• psychology
• spiritual claims
• UI
• coaching logic
• "state detection" (shadow, gift, essence)
• birth time rectification

If you find yourself trying to add meaning, you are doing it wrong.

3. Architecture at a Glance
Input (birth data)
↓
Time & Astronomy Layer
↓
Ephemeris (Swiss Ephemeris)
↓
Astrology Module
↓
Human Design Module
↓
Gene Keys Derivation
↓
Structured Output (IDs + numbers)

Content (labels, texts, names) will be added later via separate dictionaries.

4. Input Contract
Each calculation requires:
• birth_date: YYYY-MM-DD

- birth_time: HH:MM (seconds unknown)
- birth_place: name or lat/lon
- timezone: IANA identifier (e.g., Europe/Amsterdam)

Time Policy
- Input seconds are fixed at 00
- All internal calculations use second-level precision

5. Time and Astronomy
Timezone
- Use the IANA timezone database
- Including historical DST rules

Conversions
1. Local time → UTC
2. UTC → Julian Day (UT)

This step is critical.
Errors here invalidate all downstream results.

6. Ephemeris
Source
- Swiss Ephemeris

Zodiac
- Tropical

Objects (always calculate)
- Sun
- Moon
- Mercury
- Venus
- Mars
- Jupiter
- Saturn
- Uranus
- Neptune
- Pluto
- Chiron
- North Node (Mean and True)

Derived
- Earth = Sun + 180° (mod 360)

7. Astrology Module
- House system: Placidus
- Nodes: Mean Node

Calculate:
- planetary positions
- houses
- Ascendant
- Midheaven

No interpretation. Data only.

8. Human Design Module
Snapshots
- Personality: birth moment
- Design: derived moment before birth

Node policy
• True Node

Design time calculation
1. Determine Sun longitude at birth
2. Target = Sun − 88° (mod 360)
3. Find moment before birth when Sun == target

Solver
• Bracket: birth − 84 to −90 days
• Method: bisection
• Stop criteria:
■ |sun_diff| < 0.0001°
■ or time interval < 1 second

Rounding allowed only at the end.

9. Mandala Mapping (HD + Gene Keys)
Constants
• START = 313.25° (Gate 1 Line 1)
• GATE_WIDTH = 5.625°
• LINE_WIDTH = 0.9375°

Interval rule
• Start inclusive
• End exclusive

Mapping formula
r = (longitude − START + 360) % 360
gate_index = floor(r / GATE_WIDTH)
line_index = floor((r % GATE_WIDTH) / LINE_WIDTH)
line = line_index + 1
gate = gate_sequence[gate_index]

Gate sequence
• Fixed array of 64 gates
• Not calculated
• Hardcoded or config-driven

10. Human Design Output
Object order (mandatory)
1. Sun
2. Earth
3. North Node
4. South Node
5. Moon
6. Mercury
7. Venus
8. Mars
9. Jupiter
10. Saturn
11. Uranus
12. Neptune
13. Pluto

Output per snapshot
• gate
• line

Derived structures (type, authority, profile, cross) may be calculated, but not interpreted.

11. Gene Keys Module
• No independent calculations
• Fully derived from Human Design output

V1 Scope
Activation Sequence:
• Life's Work = Personality Sun
• Evolution = Personality Earth
• Radiance = Design Sun
• Purpose = Design Earth

Output:
• key (gate)
• line

12. Content Separation (Hard Rule)
Calculation layer
• Numbers and IDs only
• No text
• No meaning

Content layer
• Key Dictionary (1–64)
• Line Overrides (optional)
• Lookup by key id + line

If the calculation layer contains content, the implementation is incorrect.

13. Versioning & Metadata
Each output must contain:
• engine_version
• node_policy_per_system
• keys_dictionary_version
• key_lines_dictionary_version
• language

Without this metadata, output is invalid.

14. Testing
Golden test cases
• Fixed birth input
• Fixed expected output

JSON fixtures
• Input
• Astrology expected
• HD Personality expected
• HD Design expected
• Gene Keys expected

Any deviation must fail tests.

15. Change Policy
Changes to:
• mandala
• node policy
• design time logic
• gate mapping

are breaking changes and require:
• update of the Master Spec
• revalidation of all test cases

16. Where to Start
1. Implement time and ephemeris correctly
2. Match astrology with the golden test case
3. Implement the Design time solver
4. Match Human Design activations exactly
5. Add Gene Keys derivation
6. Make all tests pass

Only then may you refactor.

Conclusion
If you implement this correctly:
• the engine is reproducible
• outputs are comparable with existing platforms
• content remains fully decoupled
• the system is ready for scale and extension

This README is authoritative.