ERES PlayNAC "KERNEL" Codebase V7.4

ERES Institute for New Age Cybernetics

PlayNAC "KERNEL" Codebase V7.4 — Human Operating System (HUOS) 4D VR/AR Environment

Building on V7.3 enhancements in ingestion, context management, observability, and the Vacationomics engine fileciteturn0file1, Version 7.4 introduces a fully integrated VR/AR module under the VERTECA framework, enabling immersive smart-city user-group experiences via the Green-Box Simulator highlighted in the dashboard design fileciteturn0file0.



🔑 Key Updates in V7.4

1. Human Operating System (HUOS) Module

- New package src/huos/ for 4D VR/AR environment services
- Core classes: HUOSKernel, SpatialSceneManager, UserGroupCoordinator
- Interfaces with PlayNACKernel command API for gesture/voice control under Mandala-VERTECA

2. VERTECA VR/AR Integration

- o Extend src/nav/mandala_translator.py for spatial gesture mapping in 3D space
- Sample Unity/three.js demo in examples/vr_ar/ showcasing Green-Box environment hooks

3. Green-Box Simulator Enhancements

- Connect HUOSKernel to low-level rendering pipelines (src/huos/render/)
- Add spatial audio cues and dynamic zone highlighting

4. Smart-City User-Group Orchestration

- New UserGroupSession abstraction in src/kernel/context_manager.py for multi-user VR sessions
- Supports real-time EP node linkage and GERP forecasting overlays in VR dashboards

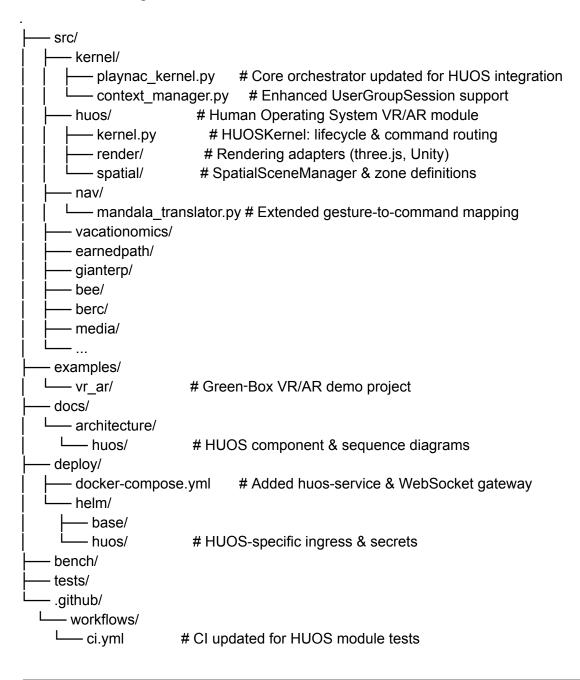
5. **Deployment & Configuration**

- Update Docker Compose to include huos-service container and WebSocket gateway in deploy/docker-compose.yml
- Extend Helm chart with VR ingress rules and secrets for AR device APIs in deploy/helm/huos/

6. **Documentation & Diagrams**

- Add sequence and component diagrams under docs/architecture/huos/
- New Sphinx autodoc entries for src/huos/ classes

Directory Structure



Getting Started

Clone & Setup

git clone https://github.com/ERES-Institute-for-New-Age-Cybernetics/PlayNAC-KERNEL.git cd PlayNAC-KERNEL python3 -m venv venv && source venv/bin/activate pip install -r requirements.txt

1. Configure

Copy .env.example to .env and add:

HUOS_API_KEY=your_vr_api_key HUOS_WS_ENDPOINT=ws://localhost:8080/huos

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Run Demo

Start services docker-compose up --build # Launch kernel with HUOS support python src/kernel/playnac_kernel.py --enable-huos

2. Explore VR/AR Demo

 Open examples/vr_ar/index.html in a modern browser with WebXR support

Documentation & Contribution

- Architecture Docs: docs/architecture/huos/
- API Reference: make docs generates Sphinx site including HUOS module
- **Testing**: pytest --maxfail=1 --disable-warnings -q now includes tests/huos/

Contributions welcome! Fork, create a feature branch feature/v7.4-huos, and submit a pull request.

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