

Sensors & Spectrum

Component purpose, interfaces, evidence and verification.

- [OpenRF](#)
- [OpenSSA](#)
- [OpenISAC](#)

OpenRF

OpenRF

Field	Value
Distribution	BSS — OpenC5ISR
Product	OpenC5ISR
Release	0.15.1
Deployment	<code>openc5isr.bss.dev</code>
Source	<code>/srv/bss/releases/OpenC5ISR-v0.15.0-20app</code>
Evidence	Catalog intent plus component-scoped static evidence
Source fingerprint	<code>93926e8c834f1ed79c9017a4096f70c76d73ce4f870f104fbd0cf54b2bed50ee</code>
Status	Generated baseline — human review required

“ **Verification boundary:** This page combines platform design guidance with static evidence from the release. It does not prove that every detected interface is enabled, reachable, secure, or operational in the deployed environment.

Purpose

The radio registration, spectrum sensing, control and distributed RF processing capability for heterogeneous SDRs and radio utilities.

Operational value

Provides one operational layer for registering radios, viewing spectrum, running utilities and publishing detections from edge nodes.

Differentiators

Uses common SDR abstractions where practical, supports distributed edge processing, and connects RF observations to timing, semantics, tracks and tasking.

Platform connections

- OpenPNT
- OpenSSA
- OpenTrack
- OpenAnalytics
- OpenCOP

Release detection

Status	Score	Evidence items
detected	224	12

Evidence type	Source	Match
path	OPENRF.md	openrf
path	lib/openrf-controller/server.js	openrf
path	lib/openrf-controller/src/store.js	openrf
path	openrf/API.md	openrf
path	openrf/ARCHITECTURE.md	openrf
content	CHANGELOG.md	openrf
content	DEPLOY-GODADDY.md	openrf
content	OPENBUS.md	openrf
content	OPENCOP.md	openrf
content	OPENCYBERSEC-QUICKSTART.md	openrf
path	edge/openssa-sensor/reference/open-rf/app.js	open-rf
path	edge/openssa-sensor/reference/open-rf/index.html	open-rf

Candidate REST/API interfaces

No component-specific REST route was associated by the scanner.

Candidate real-time interfaces

No component-specific WebSocket endpoint was associated by the scanner.

Configuration candidates

Variable	Default	Evidence
ADDRESS	—	openrf/agent/functions/probe-n310.sh
API_BASE	—	open-rf/app.js, public/open-networks/app.js, public/open-rf/app.js
BASE	http://127.0.0.1:3000	DEPLOY-GODADDY.md, OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, UPGRADE-v0.14.0.md
BASE_PATH	—	open-rf/app.js, public/open-rf/app.js, third_party/ontowiki/application/scripts/travis/install-services.sh
BUILD	—	edge/openpnt-linuxptp/SELF-TEST.sh, edge/openssa-sensor/install/install-native-uhd.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
BUILD_DIR	\$ENGINE/build	edge/openssa-sensor/install/install-native-uhd.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
CONFIG	—	drivers/install_openpnt_agent.sh, edge/opencybersec/install.sh, edge/openssa-sensor/install/check-sensor.sh, edge/openssa-sensor/install/install-sensor.sh

Variable	Default	Evidence
CORE_DIR	—	openrf/agent/functions/start-5g-core.sh, openrf/agent/functions/status-5g-core.sh
DATA_DIR	path.join(ROOT	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, RELEASE-MANIFEST-v0.14.0.json, UPGRADE-v0.14.0.md
ENGINE	—	edge/openssa-sensor/install/install-native-uhd.sh
EUID	\$(id -u	drivers/install_openpnt_agent.sh, edge/opencybersec/install.sh, edge/opencybersec/uninstall.sh, edge/openpnt-linuxptp/install-linuxptp.sh
GNB	—	openrf/agent/functions/start-5g-ran-b210-50mhz.sh, openrf/agent/functions/start-5g-ran-n78-n310.sh
HERE	—	edge/openpnt-linuxptp/SELF-TEST.sh, edge/openpnt-linuxptp/install-linuxptp.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
HOME	/tmp	lib/openllm/pipeline-engine.js, openrf/agent/functions/start-5g-core.sh, openrf/agent/functions/status-5g-core.sh, third_party/ontowiki/.travis.yml
HOST	0.0.0.0	server.js, lib/openrf-controller/server.js
OPENCYBERSEC_AGENT_TOKEN	[REDACTED]	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, server.js, examples/opencybersec/ingest-examples.sh
OPENCYBERSEC_OPERATOR_TOKEN	[REDACTED]	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, server.js, examples/opencybersec/ingest-examples.sh
OPENRF_5G_CORE_DIR	\$HOME/5g/magic-core	openrf/agent/functions/start-5g-core.sh, openrf/agent/functions/status-5g-core.sh

Variable	Default	Evidence
OPENRF_AGENT_OFFLINE_SECONDS	70	lib/openrf-controller/server.js
OPENRF_AGENT_TOKEN	[REDACTED]	server.js, lib/openrf-controller/server.js, openrf/API.md
OPENRF_BASE_PATH	/open-rf	lib/openrf-controller/server.js
OPENRF_DATA_DIR	path.join(DATA	server.js, lib/openrf-controller/server.js
OPENRF_DISPATCH_LEASE_SECONDS	90	lib/openrf-controller/server.js
OPENRF_OPERATOR_TOKEN	[REDACTED]	server.js, lib/openrf-controller/server.js, openrf/API.md, openrf/README-UPSTREAM-v0.3.0.md
OPENRF_PYTHON	/usr/bin/python3	openrf/agent/src/openrf_agent/util.py
OPENRF_RADIO_ADDRESS	192.168.20.2	openrf/agent/functions/probe-n310.sh
OPENRF_RADIO_ID	N310-01	openrf/agent/functions/start-5g-ran-n78-n310.sh
OPENRF_READ_TOKEN	—	server.js, lib/openrf-controller/server.js, openrf/API.md
PORT	3000	server.js, edge/openssa-sensor/local_server.js, lib/openrf-controller/server.js
PYTHONUNBUFFERED	1	openrf/agent/systemd/openrf-agent.service
ROOT	—	edge/opencybersec/install.sh, edge/openpnt-linuxptp/SELF-TEST.sh, edge/openpnt-linuxptp/install-linuxptp.sh, edge/openssa-sensor/install-demo-sensor.sh
RUN_GROUP	—	openrf/agent/install.sh
RUN_USER	—	openrf/agent/install.sh
SUDO_USER	\$USER	edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh, openrf/agent/install.sh
UHD_INCLUDE_DIRS	—	edge/openssa-sensor/native/uhd_spectrum_engine/CMakeLists.txt
UHD_LIBRARIES	—	edge/openssa-sensor/native/uhd_spectrum_engine/CMakeLists.txt

Variable	Default	Evidence
<code>USER</code>	—	edge/openssa-sensor/SENSOR_INSTALL.md, edge/openssa-sensor/install-demo-sensor.sh, edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh

Service candidates

Service	ExecStart	Source
openrf-agent.service	<code>/usr/local/bin/openrf-agent --config /etc/openrf/openrf-agent.json</code>	<code>openrf/agent/systemd/openrf-agent.service</code>

External dependencies/endpoints

Host	URL	Source
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host/}</code>	<code>lib/openrf-controller/server.js</code>
controller-ip	<code>http://controller-ip:8075/open-rf/</code>	<code>openrf/README-UPSTREAM-v0.3.0.md</code>
loammhpng4.c36.airoapp.ai	<code>https://loammhpng4.c36.airoapp.ai/</code>	<code>CHANGELOG.md</code>

Verification checklist

- Confirm the component is included and enabled in this edition/release.
- Record its authoritative service, process/container, port, base URL and health endpoint.
- Exercise its primary operator workflow and capture expected versus actual results.
- Verify authentication, authorization, audit, error behavior and data handling policy.
- Verify OpenBus/OpenKnowledge relationships and time/provenance metadata where applicable.
- Document known limitations and the release in which they are corrected.

Maintainer Notes

Add human-reviewed deployment notes, corrections, decisions, screenshots, and links here.
Content outside the generated block is preserved on future runs.

OpenSSA

OpenSSA

Field	Value
Distribution	BSS — OpenC5ISR
Product	OpenC5ISR
Release	0.15.1
Deployment	<code>openc5isr.bss.dev</code>
Source	<code>/srv/bss/releases/OpenC5ISR-v0.15.0-20app</code>
Evidence	Catalog intent plus component-scoped static evidence
Source fingerprint	<code>93926e8c834f1ed79c9017a4096f70c76d73ce4f870f104fbd0cf54b2bed50ee</code>
Status	Generated baseline — human review required

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Purpose

The spectrum situational-awareness view for live RF visualization, detections, registered sensors and geospatial correlation.

Operational value

Converts raw edge RF data into a shared operational picture instead of forcing users to operate isolated laboratory tools.

Differentiators

Combines high-rate edge processing with selective real-time transmission and ties spectrum observations to registered radio location and time.

Platform connections

- OpenRF
- OpenPNT
- OpenCOP
- OpenTrack
- OpenAnalytics

Release detection

Status	Score	Evidence items
detected	107	12

Evidence type	Source	Match
path	OPENSSA-DEMO-DEPLOYMENT.md	openssa
path	OPENSSA.md	openssa
path	UPGRADE-OPENSSA-v0.5.0.md	openssa
path	data/openssa.json	openssa
path	edge/openssa-sensor/API.md	openssa
content	CHANGELOG.md	openssa
content	DEPLOY-GODADDY.md	openssa
content	MERGE-v0.13.1.md	openssa
content	OPENCYBERSEC.md	openssa
content	OPENPNT.md	openssa
path	edge/openssa-sensor/public/open-ssa/app.js	open-ssa
path	edge/openssa-sensor/public/open-ssa/index.html	open-ssa

Candidate REST/API interfaces

No component-specific REST route was associated by the scanner.

Candidate real-time interfaces

No component-specific WebSocket endpoint was associated by the scanner.

Configuration candidates

Variable	Default	Evidence
ALT	—	edge/openssa-sensor/install-demo-sensor.sh
BASE	http://127.0.0.1:3000	DEPLOY-GODADDY.md, OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, UPGRADE-v0.14.0.md
BUILD	—	edge/openpnt-linuxptp/SELF-TEST.sh, edge/openssa-sensor/install/install-native-uhd.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
BUILD_DIR	\$ENGINE/build	edge/openssa-sensor/install/install-native-uhd.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
CFG	—	edge/openssa-sensor/install-demo-sensor.sh
CONFIG	—	drivers/install_openpnt_agent.sh, edge/opencybersec/install.sh, edge/openssa-sensor/install/check-sensor.sh, edge/openssa-sensor/install/install-sensor.sh

Variable	Default	Evidence
DATA_DIR	path.join(ROOT	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, RELEASE-MANIFEST-v0.14.0.json, UPGRADE-v0.14.0.md
DRIVER	—	edge/openssa-sensor/install-demo-sensor.sh, edge/openssa-sensor/install/check-sensor.sh, edge/openssa-sensor/install/install-ubuntu-deps.sh
ENGINE	—	edge/openssa-sensor/install/install-native-uhd.sh
HERE	—	edge/openpnt-linuxptp/SELF-TEST.sh, edge/openpnt-linuxptp/install-linuxptp.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build-simulation.sh, edge/openssa-sensor/native/uhd_spectrum_engine/build.sh
LAT	—	edge/openssa-sensor/install-demo-sensor.sh
LON	—	edge/openssa-sensor/install-demo-sensor.sh
NATIVE_SOURCE	—	edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh
NODE_ID	COMPILED_DEPLOYMENT.nodeId	server.js, edge/openssa-sensor/lib/openssa.js, lib/openssa.js
OPENBUS_API_TOKEN	[REDACTED]	OPENKNOWLEDGE-OPENTASK.md, OPENLVC-DEMO.md, OPENLVC-RTI.md, demo_simulator.py
OPENCYBERSEC_AGENT_TOKEN	[REDACTED]	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, server.js, examples/opencybersec/ingest-examples.sh
OPENCYBERSEC_OPERATOR_TOKEN	[REDACTED]	OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, server.js, examples/opencybersec/ingest-examples.sh
OPENSSA_ACTIVE_TIMEOUT_S	900	server.js, edge/openssa-sensor/SERVER_INTEGRATION.md, edge/openssa-sensor/lib/openssa.js, lib/openssa.js
OPENSSA_EMITTER_HISTORY_LIMIT	2000	edge/openssa-sensor/lib/openssa.js, lib/openssa.js

Variable	Default	Evidence
OPENSsa_EMITTER_SIGHTING_LIMIT	500	edge/openssa-sensor/lib/openssa.js, lib/openssa.js
OPENSsa_GEOLOCATION_HISTORY_LIMIT	100	edge/openssa-sensor/lib/openssa.js, lib/openssa.js
OPENSsa_ITU_REGION	2	server.js, edge/openssa-sensor/SERVER_INTEGRATION.md, edge/openssa-sensor/lib/openssa.js, lib/openssa.js
OPENSsa_LOCATION_PROFILE	—	edge/openssa-sensor/drivers/ssa_sensor.py
OPENSsa_SENSOR_TOKEN	[REDACTED]	server.js, edge/openssa-sensor/SERVER_INTEGRATION.md, edge/openssa-sensor/local_server.js, edge/openssa-sensor/demo/run_streaming_demo.py
OPENSsa_UHD_SPECTRUM_ENGINE	—	edge/openssa-sensor/drivers/ssa_sensor.py
PORT	3000	server.js, edge/openssa-sensor/local_server.js, lib/openrf-controller/server.js
ROLE	—	edge/openssa-sensor/install-demo-sensor.sh
ROOT	—	edge/opencybersec/install.sh, edge/openpnt-linuxptp/SELF-TEST.sh, edge/openpnt-linuxptp/install-linuxptp.sh, edge/openssa-sensor/install-demo-sensor.sh
RUN_ID	—	OPENCYBERSEC.md
SERVICE_GROUP	—	edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh
SERVICE_USER	—	edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh
SITE_ID	COMPILED_DEPLOYMENT.siteId	server.js, edge/openssa-sensor/lib/openssa.js, lib/openssa.js
SSA_API	—	edge/openssa-sensor/public/open-ssa/app.js, open-ssa/app.js, public/open-ssa/app.js

Variable	Default	Evidence
<code>SUDO_USER</code>	<code>\$USER</code>	edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh, openrf/agent/install.sh
<code>TOKEN</code>	—	edge/openssa-sensor/install-demo-sensor.sh, rocketchat/outgoing-webhook-test.sh
<code>UHD_INCLUDE_DIRS</code>	—	edge/openssa-sensor/native/uhd_spectrum_engine/CMakeLists.txt
<code>UHD_LIBRARIES</code>	—	edge/openssa-sensor/native/uhd_spectrum_engine/CMakeLists.txt
<code>USER</code>	—	edge/openssa-sensor/SENSOR_INSTALL.md, edge/openssa-sensor/install-demo-sensor.sh, edge/openssa-sensor/install/install-sensor.sh, edge/openssa-sensor/install/update-existing-sensor.sh
<code>WORK</code>	—	edge/openssa-sensor/install-demo-sensor.sh

Service candidates

No component-specific service definition was associated by the scanner.

External dependencies/endpoints

Host	URL	Source
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host}/</code>	edge/openssa-sensor/lib/openssa.js
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host}/</code>	edge/openssa-sensor/tests/e2e_server.js
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host}/</code>	lib/openssa.js
<code>\${req.headers.host} </code>	<code>http://\${req.headers.host} /</code>	edge/openssa-sensor/local_server.js
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host}/</code>	edge/openssa-sensor/tests/test_openssa.js
<code>\${req.headers.host}</code>	<code>http://\${req.headers.host}/</code>	tests/openssa/test_openssa.js

Host	URL	Source
example.invalid	https://example.invalid/	edge/openssa-sensor/tests/test_profile_tool.py
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/	CHANGELOG.md

Verification checklist

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 - Record its authoritative service, process/container, port, base URL and health endpoint.
 - Exercise its primary operator workflow and capture expected versus actual results.
 - Verify authentication, authorization, audit, error behavior and data handling policy.
 - Verify OpenBus/OpenKnowledge relationships and time/provenance metadata where applicable.
 - Document known limitations and the release in which they are corrected.
-

Maintainer Notes

Add human-reviewed deployment notes, corrections, decisions, screenshots, and links here.
Content outside the generated block is preserved on future runs.

OpenISAC

OpenISAC

Field	Value
Distribution	BSS — OpenC5ISR
Product	OpenC5ISR
Release	0.15.1
Deployment	<code>openc5isr.bss.dev</code>
Source	<code>/srv/bss/releases/OpenC5ISR-v0.15.0-20app</code>
Evidence	Catalog intent plus component-scoped static evidence
Source fingerprint	<code>93926e8c834f1ed79c9017a4096f70c76d73ce4f870f104fbd0cf54b2bed50ee</code>
Status	Generated baseline — human review required

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Purpose

The integrated sensing-and-communications capability for using communications waveforms and radio infrastructure as coordinated sensing resources.

Operational value

Allows deployed communications infrastructure to contribute observations without adding a completely separate sensing stack.

Differentiators

Sensing results can use the same timing, semantic and operational integration fabric as communications and C5ISR applications.

Platform connections

- OpenRF
- OpenPNT
- OpenAnalytics
- OpenTrack

Release detection

Status	Score	Evidence items
detected	96	12

Evidence type	Source	Match
content	CHANGELOG.md	openisac
content	DEPLOY-GODADDY.md	openisac
content	EXTERNAL-SERVICES.md	openisac
content	MERGE-INSTRUCTIONS-v0.8.1.md	openisac
content	OPENBUS.md	openisac
path	open-isac/index.html	open-isac
path	public/open-isac/index.html	open-isac
content	API.md	open-isac
content	MERGE-INSTRUCTIONS-v0.8.1.md	open-isac
content	README.md	open-isac
content	WALLACECORP-DEPLOYMENT.md	open-isac
content	index.html	open-isac

Candidate REST/API interfaces

No component-specific REST route was associated by the scanner.

Candidate real-time interfaces

No component-specific WebSocket endpoint was associated by the scanner.

Configuration candidates

Variable	Default	Evidence
BASE	http://127.0.0.1:3000	DEPLOY-GODADDY.md, OPENCYBERSEC-QUICKSTART.md, OPENCYBERSEC.md, UPGRADE-v0.14.0.md

Service candidates

No component-specific service definition was associated by the scanner.

External dependencies/endpoints

Host	URL	Source
bss.dev	https://bss.dev/live/fpv-ctl/	index.html
bss.dev	https://bss.dev/live/isac/	tools/integrate_opensof_service_entrie s.py
bss.dev	https://bss.dev/live/isac/\nOPENLVC_PU BLIC_URL=\nAEGIS_SENTINEL_LABEL=AEGIS- SENTINEL\nOPENMAIL_PUBLIC_URL=\nOPENFI LES_PUBLIC_URL=\n	tools/integrate_opensof_service_entrie s.py
isac.edge.example.test	https://isac.edge.example.test/	tests/external_integrations_smoke_test .py
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/	API.md

Host	URL	Source
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/	CHANGELOG.md
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/	README.md
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/api/tracks	README.md
loammhpng4.c36.airoapp.ai	https://loammhpng4.c36.airoapp.ai/open-cop/\nhhttps://loammhpng4.c36.airoapp.ai/open-isac/\nhhttps://loammhpng4.c36.airoapp.ai/open-lvc/\nhhttps://loammhpng4.c36.airoapp.ai/open-mail/\nhhttps://loammhpng4.c36.airoapp.ai/open-files/\nhhttps://loammhpng4.c36.airoapp.ai/api/integrations\n	tools/integrate_opensof_service_entries.py

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Maintainer Notes

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