

Week 8 Push Status Report

Date: January 31, 2026

Time: 22:15:00 UTC

Branch: devsite

Repository: <https://github.com/emstar-en/STUNIR>

Status:  **SUCCESSFUL**

Executive Summary

Week 8 completion commits have been successfully pushed to the `devsite` branch on GitHub. All 2 commits containing the Python pipeline fixes and comprehensive documentation are now available on the remote repository.

Push Details

Branch Information

- **Local Branch:** devsite
- **Remote Branch:** origin/devsite
- **Sync Status:**  Up to date with remote

Push Operation

```
To https://github.com/emstar-en/STUNIR.git  
523979e..c13362c  devsite -> devsite
```

Commits Pushed

1. **c13362c04179a00435a3626b2d36513d380cb1f8**
 - Author: STUNIR Migration stunir@example.com
 - Date: Sat Jan 31 22:10:38 2026 +0000
 - Message: Add Week 8 quick summary
 - Files Changed: 1 file, 76 insertions(+)
2. **d8083217b0c37c5b29a7c5020c3c183175d4301c**
 - Author: STUNIR Migration stunir@example.com
 - Date: Sat Jan 31 22:10:10 2026 +0000
 - Message: Week 8 Complete: Fix Python Pipeline to Generate `stunir_ir_v1` Schema
 - Files Changed: 11 files, 1,626 insertions(+), 60 deletions(-)

Week 8 Key Achievements

1. Python Pipeline Fixes

- **Fixed spec_to_ir.py:**
- Corrected step format: ‘kind’ → ‘op’ to match stunir_ir_v1 schema
- Added structured target/value fields instead of stringified ‘data’
- Fixed type conversion: ‘bytes’ → ‘byte[]’
- Result: Python IR now matches Rust IR format exactly
- **Fixed ir_to_code.py:**
- Added byte[] type mapping for C code generation
- Result: Generated C code is now valid with correct types

2. Documentation Added

- **docs/WEEK8 PYTHON IR INVESTIGATION.md** - Root cause analysis
- **docs/WEEK8 COMPLETION REPORT.md** - Comprehensive completion report
- **test_outputs/PIPELINE COMPARISON.md** - Side-by-side pipeline comparison
- **WEEK8 SUMMARY.md** - Week 8 quick summary

3. Test Outputs Added

- **test_outputs/python_pipeline/** - Full Python pipeline test results
- ir.json (5,267 bytes, 11 functions)
- mavlink_handler.c (valid C code)
- mavlink_handler.py (valid Python code)
- mavlink_handler.rs (valid Rust code)
- test_log.txt (validation output)

4. Validation Results

-  Python generates stunir_ir_v1 compliant IR (5,267 bytes, 11 functions)
-  Python IR matches Rust IR format exactly
-  C code generation produces valid code
-  Python code generation produces valid code
-  Rust code generation produces valid code
-  Type mappings are correct (byte[] → const uint8_t*)
-  Multi-file spec merging works (Python > Rust/SPARK)

Impact Assessment

Before Week 8

- **Pipelines Functional:** 2/4 (50%)
-  Rust pipeline
-  SPARK pipeline
-  Python pipeline (IR schema mismatch)
-  Haskell pipeline (not implemented)

After Week 8

- **Pipelines Functional:** 3/4 (75%)
- Rust pipeline
- SPARK pipeline
- **Python pipeline (NOW FUNCTIONAL)**
- Haskell pipeline (not implemented)

Python Pipeline Capabilities

The Python pipeline is now fully operational and can be used for:

- Development and prototyping
 - Multi-file spec processing (superior to Rust/SPARK)
 - Multi-language code generation validation
 - Reference implementation for other pipelines
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Files Modified (Commit d808321)

File	Changes	Lines
tools/spec_to_ir.py	Modified	+42, -0
tools/ir_to_code.py	Modified	+1, -0
docs/ WEEK8_COMPLETION_REPORT .md	Added	+478
docs/ WEEK8 PYTHON IR INVESTIG ATION.md	Added	+279
test_outputs/ PIPELINE_COMPARISON.md	Added	+294
test_outputs/python_pipeline/ ir.json	Added	+290
test_outputs/python_pipeline/ mavlink_handler.c	Added	+78
test_outputs/python_pipeline/ mavlink_handler.py	Added	+79
test_outputs/python_pipeline/ mavlink_handler.rs	Added	+62
test_outputs/python_pipeline/ test_log.txt	Added	+29
test_outputs/python_test/ ir.json	Modified	-60, +54

Total: 11 files changed, 1,626 insertions(+), 60 deletions(-)

Files Modified (Commit c13362c)

File	Changes	Lines
WEEK8_SUMMARY.md	Added	+76

Total: 1 file changed, 76 insertions(+)

Verification Status

Local Verification

- [x] Git status shows “up to date with origin/devsite”
- [x] No uncommitted changes related to Week 8
- [x] All Week 8 commits are on remote

Remote Verification

- [x] Remote HEAD is at commit c13362c
- [x] All 2 commits visible in remote log
- [x] Push operation completed without errors

Authentication

- [x] GitHub token configured correctly
 - [x] Remote URL: <https://github.com/emstar-en/STUNIR.git>
 - [x] Push permission verified
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Next Steps (Week 9 Priorities)

- 1. Add multi-file spec support to Rust/SPARK**
 - Currently Python supports multi-file specs better
 - Need to bring Rust and SPARK to parity
 - 2. Improve SPARK IR generation**
 - Convert noop placeholders to full step implementations
 - Enhance SPARK-generated IR to match Python quality
 - 3. Begin Haskell pipeline implementation**
 - Target: 4/4 pipelines functional (100%)
 - Leverage lessons learned from Python pipeline fixes
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Conclusion

 **Push Status:** SUCCESSFUL

 **Verification:** COMPLETE

 **Week 8:** DELIVERED TO GITHUB

All Week 8 deliverables are now available on the `devsite` branch of the STUNIR repository. The Python pipeline is fully functional, bringing the project to 75% pipeline completion (3/4 pipelines operational).

Report Generated: Sat Jan 31 22:15:00 2026 UTC

Generated By: STUNIR Migration Team

Version: v0.4.0 - Week 8 Complete