

# SBI v2.0 and ACPI FFH RISC-V Ratification Plan

**Ratification plan owner:** ATISH PATRA/SUNIL VL  
**Governing committee:** Priv Software HC

**Document:** Supervisor Binary Interface (SBI)  
**Document version:** 2.0.0 (planned)  
**Document link (latest):**

<https://github.com/riscv-non-isa/riscv-sbi-doc/releases/download/v2.0-rc8/riscv-sbi.pdf>

This specification describes the RISC-V Supervisor Binary Interface (SBI) v2.0 which adds various new SBI extensions and improvements to the existing SBI extensions. The new extension proposals have been thoroughly discussed and reviewed within Platform Runtime Services (PRS) TG and approved to be merged to the next SBI specification version v2.0.0.

**Document:** ACPI FFH  
**Document version:** 1.0 (planned)  
**Document link (latest):**  
<https://github.com/riscv-non-isa/riscv-acpi-ffh/releases/download/v1.0.0/riscv-ffh.pdf>

RISC-V systems which use Advanced Configuration and Power Interface (ACPI) require additional specifications for some ACPI object fields, typically those of type "Resource Descriptor". A Functional Fixed Hardware (FFH) specification provides those additional specifications.

The following steps will be taken as the timeline and milestones:

1. **Plan milestone: Define the Acceptance Criteria checklist requirements (based on [a template](#)) and present the completed plan and supporting strategy to the Chairs meeting**

Acceptance Criteria status checklist link:	<a href="#">ACPI FFH Checklist</a> <a href="#">SBI v2 Checklist</a>
Planned Plan Approval Date:	04/21/2023
Actual Plan Approval Date:	05/17/2023
Status: (Planned, Needs sign-off, Approved)	Approved

2. **Architecture Review**

Planned Architecture Review Start Date:	06/01/2023
Actual Architecture Review Start Date:	06/02/2023
Planned Architecture Review Complete Date:	06/30/2023
Actual Architecture Review Complete Date:	[08/10/2023]
Status: (Planned, Requested, Approved)	Approved

3. **Freeze: Pass non-ISA Acceptance Criteria requirements, including sign-offs**

Planned Freeze Approval Date:	07/15/2023
Actual Freeze Approval Date:	10/06/2023
Status: (Planned, Needs sign-off, Approved)	Approved

4. **Specification Public Review**

Reviewers: (Public review on isa-dev, Public review other, Technical Chairs, or ...)	<ol style="list-style-type: none"> <li>1. Public review</li> <li>2. OpenSBI developers (mailing list)</li> <li>3. isa-dev google group</li> <li>4. Linux Kernel developers (mailing list including kvm)</li> <li>5. Qemu mailing list</li> <li>6. EDK2 mailing list</li> </ol> <p>Review rationale:SBI specification is a purely software specification. OpenSBI is the reference implementation and Linux kernel/kvm is the consumer of SBI specification. That's why it is imperative that the specification should be reviewed by both communities.</p>
Duration (Days)	30
Planned Review Start Date:	07/15/2023
Actual Review Start Date:	10/06/2023
Planned Review Complete Date:	08/15/2023
Actual Review Complete Date:	11/06/2023
Status: (Planned, In progress, Complete)	Complete

5. **Ratification-ready: Pass non-ISA Acceptance Criteria requirements, including signoffs**

Planned Acceptance Criteria Sign-off Date:	09/01/2023
Actual Acceptance Criteria Sign-off Date:	12/7/2023
Status: (Planned, Sign-off requested, Approved)	Approved

6. **TSC Approval**

Planned TSC Approval Date:	09/15/2023
Actual TSC Approval Date:	[MM/DD/YYYY]
Status: (Planned, Approval requested, Approved)	Requested

7. **Board ratification**

Planned BOD Ratification Date:	10/01/2023
Actual BOD Ratification Date:	[MM/DD/YYYY]
Status: (N/A, Planned, Ratification requested, Ratified)	Planned

**Plan Assumptions:**

- The PRS TG will ensure the PoC of ACPI FFH specification is completed before sending it to the ARCH review committee. The PoC has been done for Low Power Idle State (LPI) and Collaborative Processor Performance Control(CPPC) features. Both require basic ACPI support for RISC-V Linux which is under review in upstream. The CPPC requires a new SBI extension proposed as a part of SBI v2.0. That's why, we are planning to ratify both ACPI FFH

specification and SBI v2.0 together. This will provide a holistic view of the power management abstractions in RISC-V.

- The PRS TG will ensure the PoC of each SBI extension is completed. The expected PoC will include OpenSBI/KVM/Linux kernel implementation for both sides of the SBI functions defined in those new extensions. Here is a table of each new extension and expected software PoC

SBI Extension ID	SBI Extension name	Software PoC	State	upstream status	Note:
SUSP	System Suspend	OpenSBI/Linux Kernel	New	OpenSBI: Merged Linux : After freeze	
CPPC	Collaborative Processor Performance Control (CPPC)	OpenSBI/Linux kernel	New	OpenSBI: Merged Linux : After freeze	Dependency: ACPI support is required.
DBCN	Debug console	OpenSBI/Linux/Status	New	OpenSBI: Merged Linux : After freeze Status : Merged	
PMU	Performance monitoring	OpenSBI/Linux kernel/KVM	Improvement	OpenSBI: Not yet Linux: PoC Available	PMU extension already exists. v2.0 adds new functionalities (generic firmware event, Snapshot)
STA	Steal Time Accounting	KVM/Linux	New	OpenSBI: N/A Linux: PoC Available	
NACL	Nested Acceleration for Virtualization	Xvisor/KVM	New	OpenSBI: N/A Linux: Not yet	

**\*\* Note: This document is a combined version of the original [ACPI FFH Ratification Plan](#) and [SBI v2.0 2023 Ratification Plan](#) documents. This is the master document as of May 23, 2023. \*\***