Subject: SDcard Stack Phase I

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Product Approval Committee:

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1. Summary

SDcard Stack Phase I is a project to provide access to Secure Digital (SD) storage media via SD card slots found on common laptop computers. SD media is a small-form-factor storage media popular for use with digital cameras, MP3 players, and other consumer devices.

2. Decision & Precedence Information

The project is approved as specified in reference [1] - [4], but as modified by the required technical change listed in Appendix A below.

The project may be delivered in a patch release of the ON consolidation.

The project depends on the following other project and may not be delivered before it.

PSARC/2007/654 blk2scsa

3. Interfaces

The project exports the following interfaces.

Interfaces Exported		
Interface	Classification	Comments
drv/sdhost	Volatile	sdhost device driver name
drv/sdcard	Volatile	sdcard device driver name
misc/sda	Consolidation Private	sda common API support
sys/sdcard/sda.h	Consolidation Private	sda common API header
sda_mem_init()	Project Private	memory card API
sda_mem_fini()	Project Private	memory card API
sda_host_init()	Consolidation Private	nexus API
sda_host_fini()	Consolidation Private	nexus API
sda_host_alloc()	Consolidation Private	nexus API
sda_host_free()	Consolidation Private	nexus API
sda_host_attach()	Consolidation Private	nexus API
sda_host_detach()	Consolidation Private	nexus API
sda_host_set_private()	Consolidation Private	nexus API
sda_host_detect()	Consolidation Private	nexus API

Interfaces Exported		
Interface	Classification	Comments
sda_cmd_done()	Consolidation Private	nexus API
sda_transfer_done()	Consolidation Private	nexus API
sda_host_err()	Consolidation Private	nexus API
sda_host_log()	Consolidation Private	nexus API
struct sda_host	Consolidation Private	nexus API opaque slot handle
struct sda_ops	Consolidation Private	nexus API operations vector
struct sda_cmd	Consolidation Private	nexus API operations
SDA_OPS_VERSION	Consolidation Private	nexus API operations version
SDA_CMDF_*	Consolidation Private	nexus API command flags
SDA_PROP_*	Consolidation Private	nexus API slot properties

The project imports the following interfaces.

Interfaces Imported		
Interface	Classification	Comments
blk2scsa	Consolidation Private	PSARC 2007/654

4. Opinion

4.1. blk2scsa dependency

One member was unclear about the boundary between blk2scsa PSARC/2007/654 and this project. The project team clarified this, and an updated clarification has been posted in [4]. Further, it is noted that PSARC/2007/654 is a dependency for this case.

4.2. sda_slot_online versus sda_slot_offline errors

One member was surprised that sda_slot_offline could return an error while sda_slot_online could not. The project team responded that this was a hold over from earlier design, and has updated the specification so that both functions have no return value (void).

4.3. hald/dbus/userland interaction

One member raised a question as to whether certain userland components would need to be modified as part of this case. The project team responded that this should not be the case, barring any bugs in those components (which would be fixed if necessary.)

4.4. sda_slot_detect insertion/removal

One member questioned that sda_slot_detect did not accept an argument with the current state (inserted or removed) of the card, and other members expressed concern that this could cause confusion for device driver implementors. The project team clarified the relationship of this portion of the API, and updated the specification to make clear the interaction of this function and the SDA_PROP_INSERTED property.

4.5. cfgadm plugin

During case investigation, it was noted that without a specific plugin for cfgadm(1M), administrators might be presented with confusing information misrepresenting an SD slot as a SCSI bus. This led to the required technical change listed in

4.6. spec change due to TCR

When implementing the technical change required in Appendix A, the project team found that some interface changes were required. Specifically, instead of using abstract slots, the host driver must register itself once per instance. A new sda_host_set_private() function is provided for host drivers to supply per-slot private data. The interface table and the specification in [4] have been updated accordingly.

5. Minority Opinion(s)

None.

6. Advisory Information

None.

7. Appendices

7.1. Appendix A: Technical Changes Required

1. The project shall deliver a cfgadm plugin for SDcard busses, so that users of cfgadm are presented with meaningful and accurate information about the state of SDcard slots.

7.2. Appendix B: Technical Changes Advised

None.

7.3. Appendix C: Reference Material

Unless stated otherwise, path names are relative to the case directory PSARC/2007/659.

1. 20 Questions
   File: inception.materials/sdcard.20q.txt
2. One Pager
   File: inception.materials/sdcard.1pager.txt
3. Functional Specification
   File: final.materials/sdcard.spec.txt

4 Issues and Responses
   File: final.materials/issues

