Dual-signature Type 3 and Type 4 PD DLL state machine

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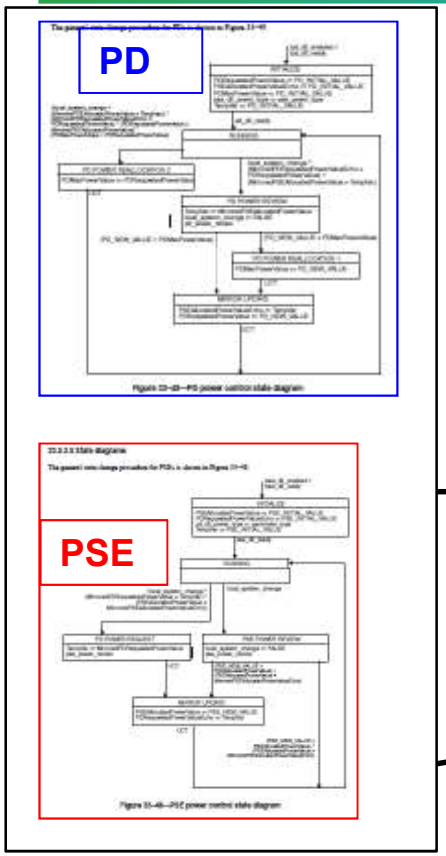
Objectives

- To develop DLL state machine for dual-signature PD.
  - Option 1: Reuse of the same DLL SM for single-signature and dual signature.
  - Option 2: Duplicate PSE and PD DLL state machine and its related text and number of variables/constants/functions.
- Cleanup and sync with clause 79, 33.5 etc.
- Supports use cases with:
  - Power Demotion
  - power is not sufficient for one of the modes or both modes.
  - Isolated load and common loads.

Option 1: Reuse of the existing state machines

- The DLL state machine will be run on mode A and then on Mode B
  - Totally independent DLL per pairset.
  - After running the state machines over modeA, store all state machine variables before going to run on modeB.
  - These are internal variables and as such doesn't affect all current management variables and TLV tables and no need to add more management variables.
- Use the same TLV fields for pd_requested_power and PSE_allocated_power for all modes and Alternatives OR
- Add 4 fields for pd_requested_power_modeA, pd_requested_power_modeB, PSE_allocated_power_alt_A AND PSE_allocated_power_alt_B.

Option 1: Reuse of the existing state machines.
With the same TLV fields (2) as in D2.1.



1

2

1	pse_sig_type=single pd_single_or_dual = single
2	pse_sig_type=dual pd_single_or_dual = dual

Table 79-5b

PD requested power value	PSE allocated power value	PD Mode selection	TLVs
PD req. power value	PSE alloc. power value	Not used	
PD req. power value Mode A	PSE alloc. power value Alt A	A	
PD req. power value Mode B	PSE alloc. power value Alt B	B	

Option 1a: Reuse of the existing state machines.
With 6 TLV fields for maximum flexibility.

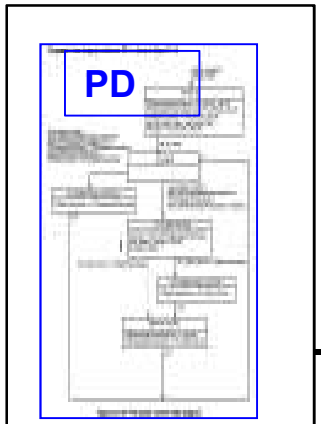


Table 79-5b

PD req. power value	PSE alloc. power value	PD req. power value value modeA	PSE alloc. power value ALT A	PD req. power value value modeB	PSE alloc. power value ALT B	PD Mode selection	TLVs
						Not used	
						A	
						B	

1

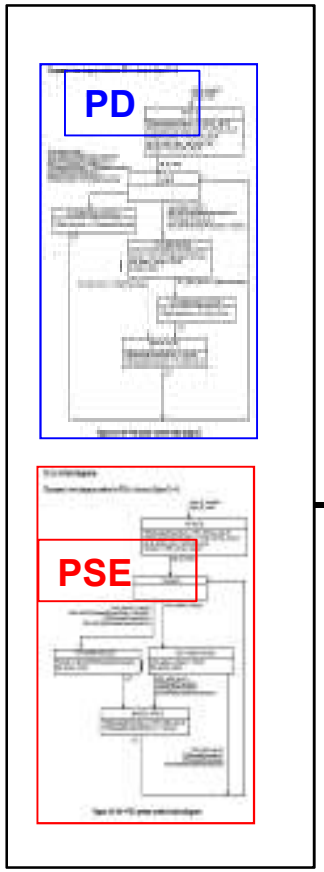
2

1	pse_sig_type=single pd_single_or_dual = single
2	pse_sig_type=dual pd_single_or_dual = dual

Option 2: Separate state machines

- Keep clause 33.5 for single signature and Type 1 and 2.
- Duplicate 33.5 for dual-signature PSE and PD DLL state machine.
- All constants/Variables/Functions will have suffix "_(M)" in the text and in the state machine.
- All management variables (clause 30) and TLV clause 79 Tables need to be updated with the new variables and attributes.
- The DLL state machine will be run on mode A and then on Mode B as in Option 1.
  - Totally independent DLL per pairset as in option 1.
- Add 4 fields for pd_requested_power_modeA, pd_requested_power_modeB, PSE_allocated_power_alt_A AND PSE_allocated_power_alt_B.

Option 2: duplicate the state machines and all its related text in clause 33.5, 30 and 79. – Single Signature and Type 1/2.



1

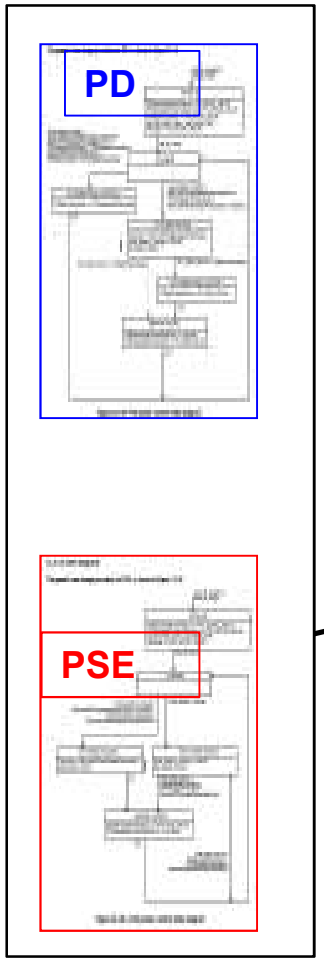
Table 79-5b

PD req. power value	PSE alloc. power value	PD req. power value value modeA	PSE alloc. power value ALT A	PD req. power value value modeB	PSE alloc. power value ALT B	PD Mode selection	TLVs
						Not used	

1	pse_sig_type=single pd_single_or_dual = single
2	pse_sig_type=dual pd_single_or_dual = dual

sig_type is generated by the PSE
single_or_dual is generated by the PD

Option 2: duplicate the state machines and all its related text in clause 33.5, 30 and 79. – dual-signature.



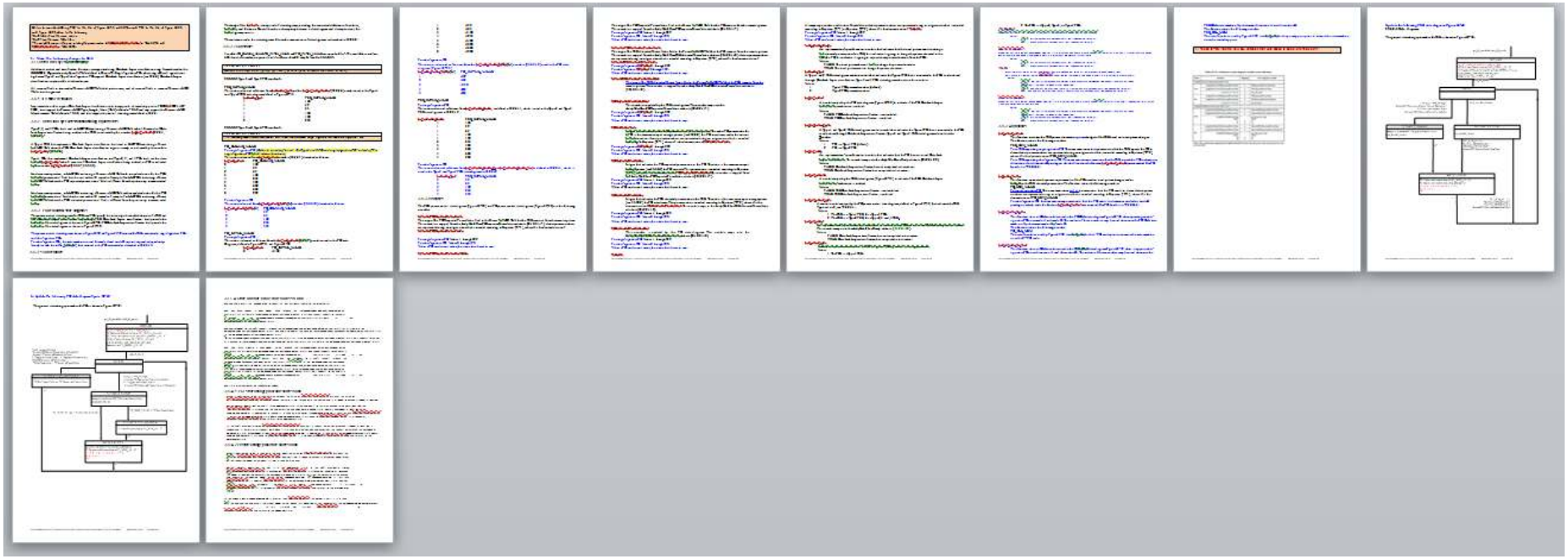
2

Table 79-5b

PD req. power value value modeA	PSE alloc. power value ALT A	PD req. power value value modeB	PSE alloc. power value ALT B	PD Mode selection	TLVs
				A	
				B	

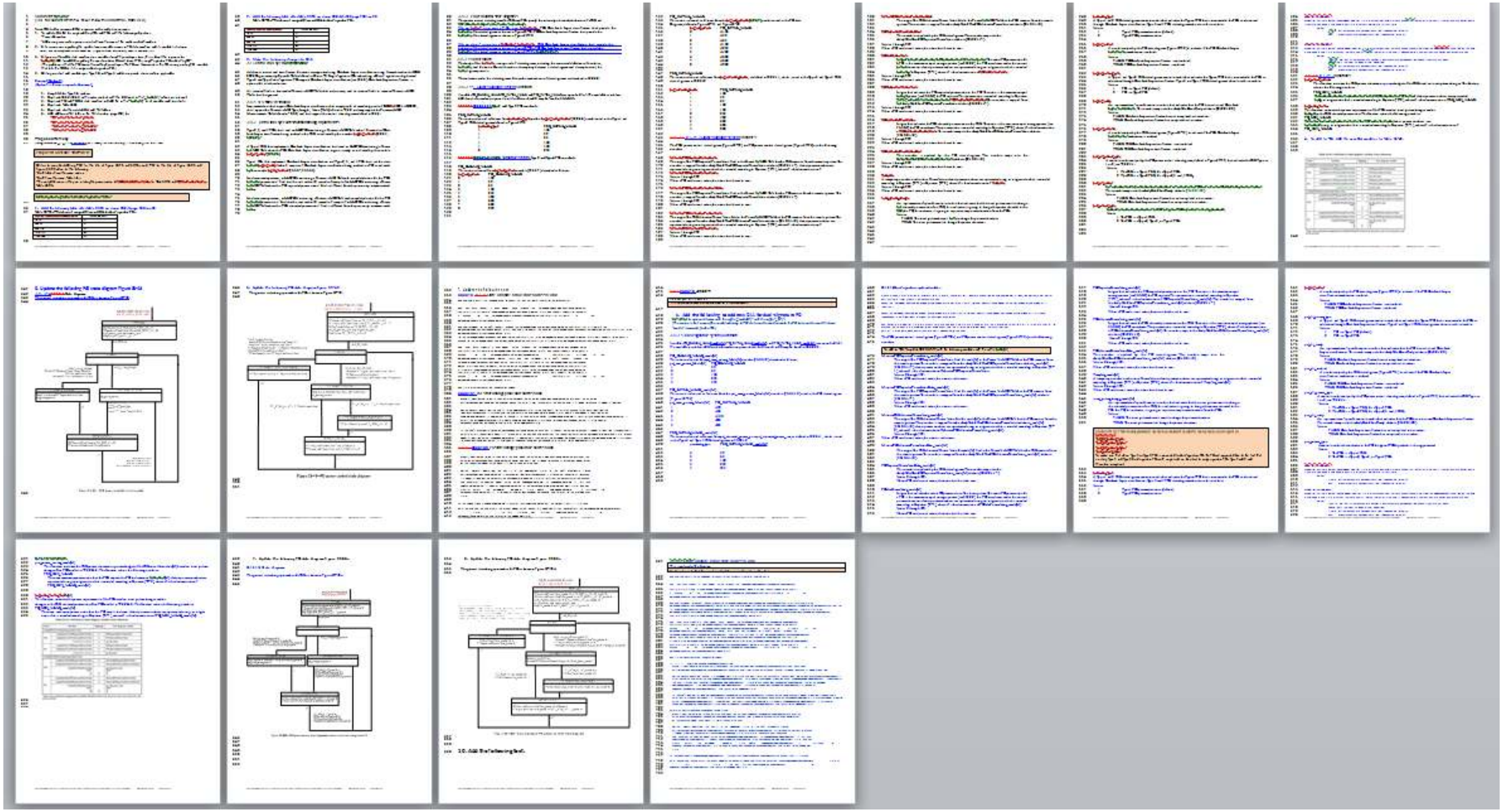
1	pse_sig_type=single pd_single_or_dual = single
2	pse_sig_type=dual pd_single_or_dual = dual

Option 1: The whole text changes



- All single signature text kept unchanged.
- Dual-signature definitions where integrated in the existing constants/variables/Functions.

Option 2: Part of the changes



- +Additional text and Tables for clause 30 and 79

Summary

Parameter	Option 1	Option2
	Reusing SM and text	Duplicate SM and text
Observed external behavior	~The same	
Technical Complexity	~The same	
Text complexity	You are welcome to comment	
Number of state machines	2	4
Number of variables/functions/constants	~As currently	+ 15
Added text	~As currently	Multiplied + adding text to clause 30 and 79.
Other considerations	You are welcome to comment	

See proposed baseline text in darshan_11_1116.pdf divided to two files. Option 1 and option 2.
Group to discuss and decide which one is best to adopt

Thank You