Feasibility of Enhanced FEC

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Agenda

Power Budgets (APD and PIN) have proposed using RS(255, 223) to facilitate or ease the requirements of the optical components beyond RS(255, 239)

We want to evaluate the feasibility of RS(255,223) from the perspective of implementation complexity

Relative Gate Count/Approximate Power Consumption for codes at 1G and 10G

	Encoder		Decoder	
RS(255,239) 1G	1x	< 10Mw	1.5x	< 20Mw
RS(255,239) 10G	8x	< 50Mw	13x	< 200Mw
RS(255,223) 10G	16x	< 100Mw	25x	< 400Mw

- We see that the move to 10G involves a significant jump in resource requirements
- Numbers for RS (255, 223) at 10G are estimated to be about double those of S-FEC

Conclusions

1. Implementation of RS(255, 223) requires substantial (but still manageable) size/power resources in the ONU

2. A more complex code – particularly a interleaved/concatenated code - would probably exceed what could be considered reasonable complexity for a consumer device