OSEM technology choice – cost implications

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Cost model

- Simple cost model
- For each OSEM type, a development cost plus a cost per OSEM
- TOTAL = DEVLT + n*UNITCOST
- Assumes noise prototype (quantities many tens) have same unit cost as main run.

OSEM types

- Type “A”: Basic (known performance issues)
- Type “B”: Enhanced imaging type (performs at 1e-11, currently no technical solutions for this type)
- Type “C”: Interferometric type
- Type “D”: Simple OSEM based on LIGO 1 type
- Type “E”: Eddy current damping

Options

- Several options costed, reduced to two:

Option	Local long + vert	All others	ECD?
1	B (enhanced imaging)	D (LIGO 1 type)	Yes
2	A (Basic imaging)	D	Yes
3	C	D	No
4	C	D	Some

Who buys what

- Birmingham: Noise protytpe, quad + triple.
  - (Plus ALL electronics)
- RAL: remainder for TM, BS, FM
- LIGO: remainder for MC, RM

Costs in kGBP

Option		Bham	RAL	LIGO	Total
1	Enhanced imaging type	251	587	326	1165
2	Reduced performance	215	562	303	1081
3	interferometer	278	532	401	1211
4	interf + some ECD	278	638	401	1317

Costs in kUSD at 1.6

Option		Bham	RAL	LIGO	Total
1	Enhanced imaging type	402	939	522	1864
2	Reduced performance	345	899	485	1729
3	Interferometer	444	850	642	1937
4	Interf + some ECD	444	1020	642	2107