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Smart R&D case minute

Case minutes should establish the views of appraisal officers leading to a recommendation. Case minutes will establish views expressed as statements against each criterion backed with succinct reasoning (for example: "The applicant meets the basic eligibility for the scheme. The company specialises in software development and has been in business for 20 years. It is not part of a group. It currently employs 5 people and has a turnover of £250,000 and a balance sheet of £55,000.")

To: [redacted] 21/8 OK
From: [redacted]

Date: 21 August 2003

R&D project: Satellite Propulsion Research Ltd - Development of a Microwave eng for Sat Propulsion

Issue

Whether to support the project application from Satellite Propulsion Research Ltd for a R & D Development award.

Recommendation

That you agree that the project satisfies the appraisal criteria and warrants an award of £81,291 for a project to Development of a Microwave eng for Sat Propulsion.

Timing

The full application was received on 02 July 2003. The target date for informing the applicant of a decision was 31 August 2003. During the project there were 6 waiting days and the total number of processing days recorded was 45.

Eligibility criteria

- Company background. The company was incorporated in October '02, with its principal activity being that of research and engineering principles involving satellite propulsion systems.
- The company have previously been awarded a Feasibility study that was completed in December '02. The overall outcome of the proposal were successful,

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though not able to have independent testing undertaken, the theories were independently reviewed and found that there were no significant problems were found in the experimental methodology or test results.

- Having been the project manager for the previous application, I found the company to thoroughly professional, keeping very good records and reports, and making regular claims that supported the original additionality argument.

Project background

- This is a follow-on proposal from Feasibility Study, GOSE 931. The EmDrive is a new concept in electronic propulsion for spacecraft that directly converts electrical energy in to thrust. This provides benefits greatly improved thrust time with significant reduction in weight to that of conventional Ion systems.

Level of technological innovation

- Technical advice supports the project as being innovative, though probably more experimental in nature than would be the norm for Development projects. practical problem resolution will be undertaken to provide a working demonstrator. If the technology is successful, it would enable the UK a world lead in this sector.



Technical risks and challenges

- There are still some significant technical challenges that are required to be resolved; the applicant has highlighted most of these. These include achieving a high 'Q' (magnification factor of the wavelength due to resonance frequency) that has to be balanced against the narrowing of the bandwidth to optimised output, stabilising thermal balances and a test rig design that will enable the validation of the proposal.
- Technical advice supports these risks and challenges.



Intellectual Property

Patent advice from the original proposal, there are no infringements to the application.

IPR rating

X

Commercial prospects and exploitation potential

- The product would enter a niche market that will pay premium prices for high technology products that would provide the space industry with significant benefits. The technical advisor has stated that the technology, if proven, will enable the UK to become a world leader. However, it has been highlighted that unless significant advances can be demonstrated, it is likely that this will not be taken up by the industry. None the less, it would be unconstructive not to support this project for this reason, with it may be possible to exploit the technology in another application.

Commercial prospects and exploitation rating

X

Management

- As stated previously, the company have proven their good management abilities through their previous project. There is a larger team involved, greatly improving the technical and financial know how within the company.

Management rating

X

Financial viability

- The company is only undertaking this one activity and has a number of loans and agreements in place that will enable the company to proceed with its proposed undertakings. FRM have made a number of queries on the company structure and costs but these issues have been resolved via confirmation through emails.
- Viability considered adequate.

Financial viability rating

X

Additionality

- The company has insufficient internal funds that would support such a venture, FRM have concurred.

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[REDACTED]	BNSC	Over 5 years practical knowledge	Not Selected	0	0	0	0	0
[REDACTED]	Momenta (AEA Technology Plc)	Less than 5 years practical knowledge	No	5	1	5	5	3
[REDACTED]	Imperial College London - Dept of Electrical and Electronic Engineering	Recognised world/national/sector expert	Yes	3	3	2	2	2
[REDACTED]	BNSC	No practical knowledge - some policy related	Yes	3	3	1	3	1