



GRANT REPORT

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Project Funding Application No: 0 4 7
(TO BE COMPLETED BY QUIPROCON
ADMINISTRATOR)

Individual Name: ...Dr William Munro.....

Organisation Name:
Hewlett Packard Labs (Bristol)

Membership No:

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DESCRIPTION OF ACTIVITY and Outcome:

Professor Subhash Chaturvedi from the University of Hyderabad in India visited HP labs in Bristol for approximately a week during an extended stay he was making to Prof F. Mancini group in Salerno

During he visit to HP we worked on several projects including:

- Subhash had recently introduced the notion of the *strength* of an unextendible product basis and a quantitative measure for it had been suggested. This was done with a view to providing an indirect measure for the bound entanglement of formation for the bound entangled mixed state associated with an unextendible product basis. During his visit we started a numerical test of his theory. We expect results in several months from this.
- Also Subhash and coworkers have been investigating the Wigner functionds defined when the configuration space is the group manifold of a compact group. These Wigner functionds seem a natural way to distinguish non-classical quantum states from classical ones. We are currently examining the extent to which this approach can be used as a measure of entanglement.
- Lastly we actively discussed group theory parameterization for unitary matrices and there corresponding measures. Our aim is to determine the best parameterization for 2 qubit operations.

This was a highly successful trip and we expect to see a number of results being published in the next year or so in Physical Review A.