(a) Name of proposing person(s):
Dr Richard Knight, BCB, UWC and Martin Cocks IOI-SA, UWC

(b) Title of project:
Use of an Internet-based Knowledge Commons as a research tool for creating and sharing “Expert Knowledge” within the BIOTA community for transferring research to policy.

(c) Regional focus and limits:
Across all South Africa or South African/Namibian BIOTA sites

(d) Please explain how your proposal would contribute to our 5 overarching themes of BIOTA:

Natural Dynamics in space and time
Spatial Information such as LANDSAT and Earthsat (Google Earth) imagery will be made available together with classifications and interpretations of these data through a Shareable Web Map Service (S-WMS). Expert knowledge and interpretation on the semi processed data (Vegetation and Landuse classifications and Change Detection analyses) derived from phases 1 and 2 of Subproject S1 (GIS and Remote Sensing) will be solicited from BIOTA researchers ranging from animal and plant communities through to socio-economic issues. In this way spatial aspects of BIOTA research will be integrated with subject-specific expertise to provide an integrated interpretation of natural dynamics and these analyses will be uploaded to the S-WMS as expert map layers.

Understanding natural processes of change
Analysis of MODIS and SPOT VGT sensors will be made available through “Time Maps” and in similar way expert knowledge and interpretation of these analyses from BIOTA researchers will be solicited for a more integrated understanding of temporal change. The results of these analyses will be uploaded as decision support layers in the S-WMS.

Understanding human use, value and impact in space and time
The S-WMS will allow users to exchange their own personal spatial data with centrally stored spatial and non-spatial information. GPS data and user-generated ESRI Shape files can be uploaded for viewing and even exchanging with other users by generating “session views” of the data. This is the essence of the “Knowledge Commons” and users can even add their own “on-screen digitized information and interpretation” derived from libraries of imagery products and share these with other researchers, the public and policy makers. An important aspect of the S-WMS is that users have complete control of their data from extremely sensitive data (that can be integrated with but not shared with the S-WMS) through to a completely open system where users can disseminate their own data and interpretations to other users for feedback and review. In this way “Participatory Research” methods are transferred from operating at the local community level and face-to-face interviews to a Global Village and electronic interactions (using discussion forums, questionnaires etc). Through this process a “Knowledge Commons” can be built for the BIOTA transect.

Interventions (strategies, tools, techniques) for sustainable use of biodiversity and biodiversity management
The different disciplines that BIOTA is engaged in implies use of a diverse range of research methodologies and even vocabularies and these can generate barriers to integration of information from biophysical to socio-economic. Dissolving barriers to information exchange is the starting point for developing a Knowledge Commons which provides researchers, managers and policy developers a rich range of “interpreted information” to formulate rigorous and defensible interventions and integrated information support for policy development.

(e) Proposed co-operating partners:
Dr Michael Schmidt, DLR.
(f) Key questions:

a) Using a Shareable Web Map Service (S-WMS) that has already been developed can we make spatial information such as maps, satellite images, field survey work more openly available for other BIOTA researchers and unlock the need for specialist GIS skills in undertaking spatially explicit research?

b) Using an S-WMS integrated with a Knowledge Management System; together with the meta-analysis of web-based surveys can we develop a “Participatory Approach” methodology that operates at the Electronic Global Village scale?

c) Can the integration of web-based surveys which the use of data views extracted from the S-WMS be analyzed and then be fed back to decision support systems that can then be used for guiding policy development?

(g) Key activities:

Figure 1: Steps in developing a BIOTA Knowledge Commons built around a Sharable Web Map Service (S-WMS) that integrates information management and information exchange, mining and analysis to develop web-based Decision Support Systems (DSS) for guiding Policy Development.