

ACERA Project 0807

1. **Project Title:** Alternative methodologies for establishing pest and disease freedom
2. **Theme:** Surveillance and monitoring
3. **Rationale:**

This project will document methodology to represent scenario trees using Markov transition matrices and Bayesian Networks. This will embed the methodology in a wider statistical context, making it accessible to other (non-veterinary) biosecurity specialists. Moreover, since many open-source and commercial software packages are available to implement these methods, it will become easier to construct trees and calculate their properties. Finally, implementation of the methodology using a number of different approaches will make it easier to audit claims of disease freedom.

This small project extends ACERA project 07/03 into a wider biosecurity arena, and will precede a general analysis of stochastic scenario trees. Given the importance of elicitation in deriving the structure and parameters of scenario trees and Bayes Nets, the project also has strong connections to theme 2 (Eliciting judgments).

4. **Outputs:** Paper documenting the relationship between scenario trees and Bayes nets
5. **Time frame:** Commencing: 14 January 2008; finishing: 30 June 2008

6. Project leader(s)

Title	First name	Surname	Location	Organisation	% Time per year
Dr	Greg	Hood	Canberra	DAFF	10%

7. Resources

Financial years of requested funding	06/07	07/08	08/09
Salaries and stipends		20,500	
Travel		1,500	
Operating and capital			
Project Total			22000

8. **End Users:** BRS, supporting implementation of methods in AQIS