Planning for the Future: Academic / Research Perspective

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Summary

- Introduction
- Research protocols
- Fit-for-purpose certification
- Conclusions

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Introduction

- Why do research?
  - Quantify benefits & performance
  - Use for guidelines & specs
  - Performance guarantees
- Status quo

Status quo on research

- Minimal use of DPs in terms of unsealed road networks
- Ongoing in-house development/research
- Research is not focused on unsealed road management
- Limited published information
- No formal documentation
- Can't guarantee performance with documentation

Introduction

- Why do research?
  - Quantify benefits & performance
  - Use for guidelines & specs
  - Performance guarantees
- Status quo
- Industry perspectives

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Road industry perspectives

- Questionnaire (47)
  - Dust and passability are a problem
  - Aware of additives, but considered expensive and poorly marketed
  - Varying programs in place
  - Overall impressions varied from poor to good
  - Future of additives dependent on price and documentation
- Needs
  - Appropriate research (cost/benefit, design, PPGS)
  - Documentation (linked to existing specs and guides, etc)
  - Product specs / fit-for-purpose certification

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Road industry perspectives

- Additive industry
  - Technical
    - Documentation
    - Engineering
      - Testing
      - Construction methods
      - Quality control
  - Human
    - Marketing methods

Bottom line

- Practitioners cannot make an informed decision on whether to use an additive or not

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Research protocol

	Phase	Decision
1	Description/Categorise	-
2	Literature review	✓
3	Laboratory screening	✓
4	Laboratory testing (performance)	✓
5	Laboratory testing (environmental)	✓
6	Field testing	✓
7	Data analysis	✓
8	Specialised testing	-
9	Guidelines	-
10	Technology transfer	-

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Fit-for-purpose certification

- Can be used:
  - As an interim measure of performance (PPGS)
  - To assess strengths & limitations
  - For informed decision making
    - For appropriate designs
- It is NOT:
  - An acceptance or rejection
  - A guarantee of performance
  - A substitute for engineering practice

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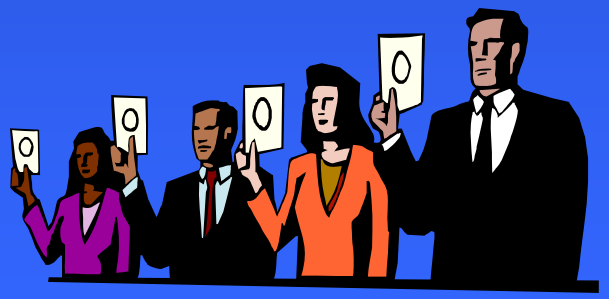
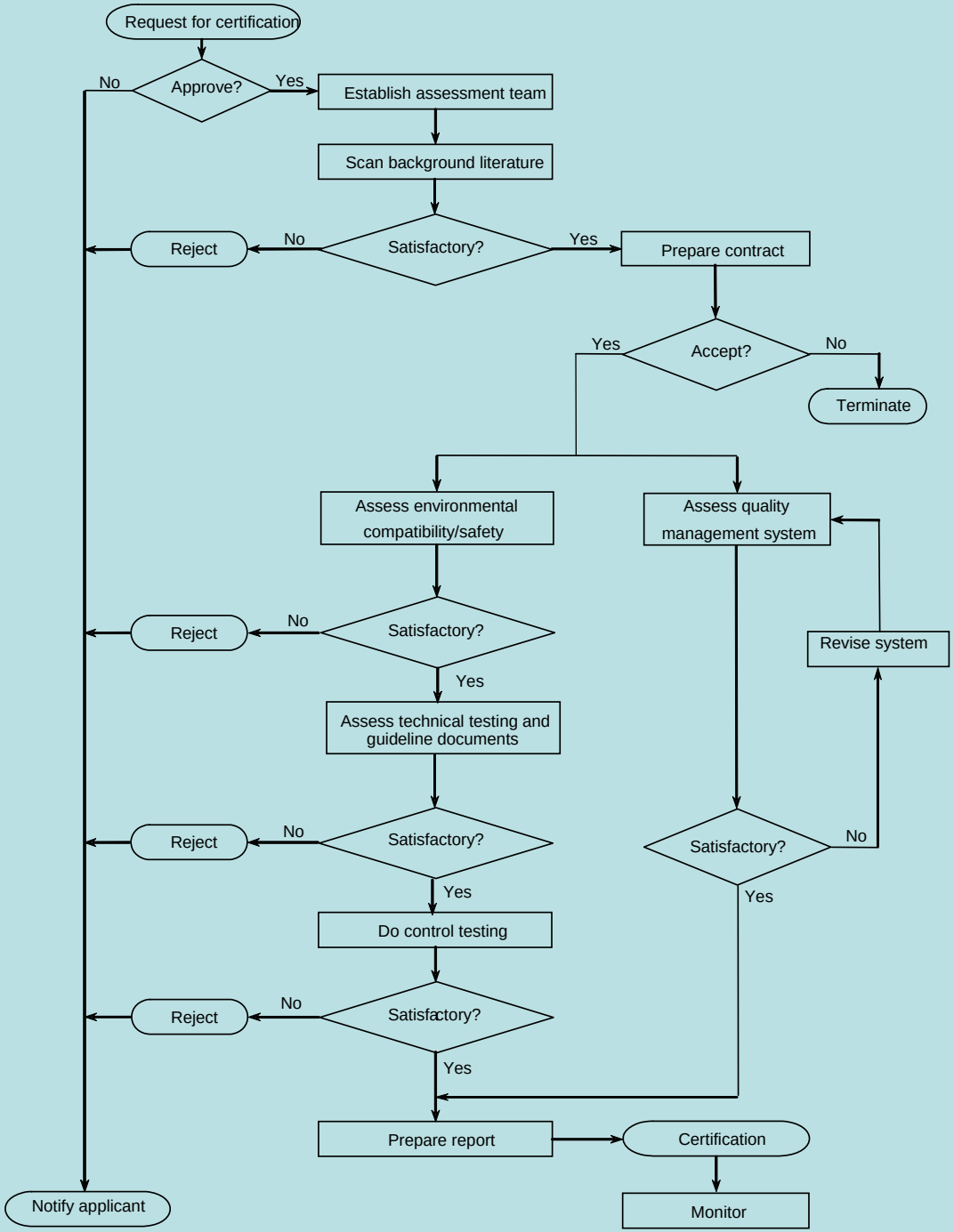
Certification procedure

1. Approve application for additive certification
2. Establish a technical assessment team
3. Scan background documentation
4. Assess quality management system
5. Assess environmental compatibility & validity of MSDS
6. Review background research that has been conducted
7. Review guideline documentation
8. Carry out control testing
9. Issue certificate
10. Conduct post certificate monitoring




Request for certification
Approve?
No
Yes
Establish assessment team
Scan background literature
Satisfactory?
No
Reject
Yes
Prepare contract
Accept?
Yes
No
Terminate
Assess environmental compatibility/safety
Assess quality management system
Satisfactory?
No
Reject
Yes
Revise system
Assess technical testing and guideline documents
Satisfactory?
No
Reject
Yes
Satisfactory?
No
Yes
Do control testing
Satisfactory?
No
Reject
Yes
Prepare report
Certification
Monitor
Notify applicant

Documentation

- Background document
  - Additive chemistry
  - Stabilization mechanism
  - Environmental testing
  - Lab performance testing
    - Experimental design
  - Field testing
    - Experimental design
  - Performance & cost analysis
  - Guideline criteria

Documentation

- Guideline
  - Purpose & limitations
  - Environmental data
  - Economic analysis
  - Design
    - Material
    - Structural
    - Climatic
  - Construction
  - Maintenance
  - Rejuvenation

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Conclusions

- We need to do things differently
  - User perspectives
  - Systematic research
  - Appropriate documentation
  - Product performance guarantees
  - Fit-for-purpose certification
  - National standard

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The way forward

- An "owner" for unsealed road specs
- Additive industry body
- Dedicated funding stream
- Category specifications
- Research protocol
  - Performance based
- Environmental assessment protocol
- Guidelines and specifications
  - Performance based / cost-benefit
- Education and training

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Key issues - future