

PeaPod - Design Report

Primary Written Deliverable for the Deep Space Food Challenge Phase 1

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1 Design Abstract

2 Design Report

2.1 Description

An automated and isolated aeroponic crop growth system, able to generate any environment from a combination of independent environment parameters, with both environment and crop growth data collection.

Operations concept follows Figure 1:

2.2 Innovation

Wide, continuous, precise control Environment optimization for output metrics

2.3 Adherence to Constraints

Power Consumption Heating/cooling Lighting

2.4 Performance Criteria

2.4.1 Acceptability

Process

Food Products

2.4.2 Safety

Process

Products

2.4.3 Resource Inputs and Outputs

Inputs

Outputs

Optimization

2.4.4 Reliability and/or Stability

Process Reliability Input and Output Stability

2.5 Terrestrial Potential