## 1a.i: Detailed List (Technical, Structured)

### 1. Stochastic Task Allocation Policy π

The derived policy π specifies a heterogeneous task allocation for the agent set A={w1​,w2​,r1​,r2​} over the task set T={t1​,t2​,t3​}. Human agents w1​ and w2​ primarily execute t1​ (Scouting) and t3​ (Grapevine ID) via complementary, path-optimized sequences across the grid. Concurrency is maximized by assigning robotic agents r1​ and r2​ to execute the entire set of t2​ (Soil Analysis) tasks in parallel, focusing on spatial partitioning of the field locations L.

### 2. Multi-Objective Optimization: The Pareto Front P

The Pareto Front P is the rigorous boundary of non-dominated solutions in the bi-objective space (P(π),E[C]). Any plan πi​∈P represents the minimum expected resource expenditure E[C] for a given system reliability P(π). The front P is the optimal locus where further cost reduction is strictly dependent on a decrease in mission success probability, P(π).

### 3. Optimal Policy πopt​ for P(π)≥0.91

The optimal non-dominated policy meeting the mission constraint P(π)≥0.91 is **Solution ID 15**.

* **System Reliability P(π):** 0.916
* **Expected Cost E[C]:** 37.10
* **Local Fault Tolerance Nmax​(ti​):** The localized re-execution budget is heavily weighted toward the high-uncertainty t2​ (Soil Analysis) tasks:
  + Nmax​(t2​l5) by r1​ is set to **9** (near maximum 10).
  + Nmax​(t2​l9) by r2​ is set to **8** (near maximum 10).
  + Nmax​(t2​l8b) by r1​ is set to **5**.
  + Nmax​(t1​l4) by w2​ is assigned **3** re-executions.