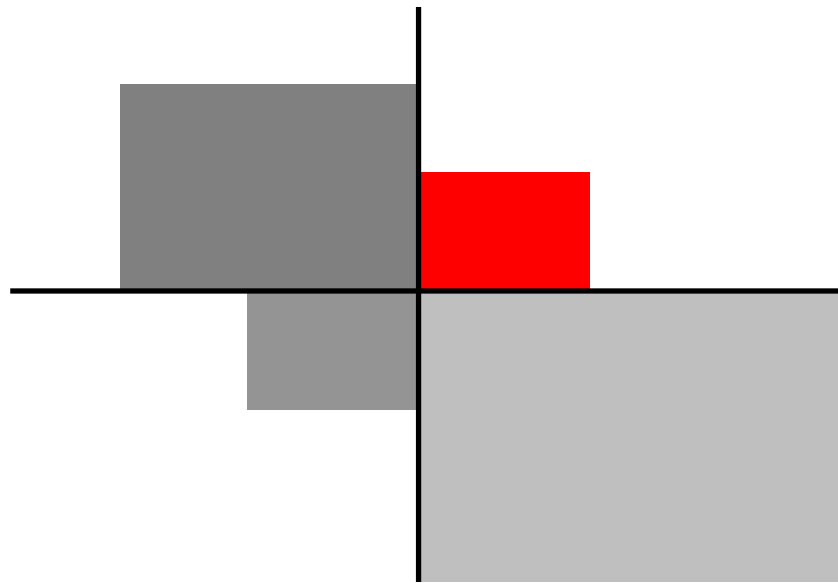


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# Technical Brief TB- I403

## Potential Payloads for Sovereign ARV Family



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## Potential Payloads for Sovereign ARV Family

By William Lovell

### Introduction

The following is a potential list of payload bays for the Sovereign ARV family of autonomous robotic vehicles. The list is by no means complete. There is always a function/job that the author did not consider. The reader should also note that unlike humans the ARVs can work at night with out light.

*The author does not advocate human replacement with the exception of life threatening hazardous jobs.*

### SFARV – “Forager” (in development)

1. **CLS-SF-Tree** – System is used to reforest large areas after clear-cut or natural disaster. System will maintain a record of tree position for future use of monitoring or harvesting. The unit can be reprogrammed to place flowering plants or shrubs into specific patterns. Example would be on the scale of formal walking gardens, city limits with the large flowering name display, etc. Only a start point, pattern direction, plant spacing, which type plant where and planting depth is required.
2. **CLS-SF-ARM4** – A light/medium duty 4-axis robotic arm. Unit has changeable end-effectors with a maximum lift weight of 1000 pounds. Current reach under consideration is 10 foot. Usages range from dry stack block wall building, rubble removal. Storage yard loading/unloading or factory materials movement.
3. **CLS-SF-TENDER** – Light duty flat bed hauler, projected 10000 pound payload. Uses are storage yards for material movement, sand bag hauler, factory material mover, construction areas for material delivery.
4. **CLS-SF-BAGGER** – A dual payload package; one unit places sand bags in a predefined configuration (flood control) unit could also be used by the military to build bunkers. The second unit is the actual sand bagger. The sand bagger can be setup as a standalone unit, it will fill the bags to a preset size and stack them in a pile for the unit one to pickup.
5. **CLS-SF-ADSR** - Autonomous Disaster Search & Rescue System – This is a small system with 4 “Vole-Bots” for searching. The “Vole-Bots” are linked back to the Forager via wireless/radio. An option will allow a single Vole-Bot to be attached to the Forager via fiber optics for large scale video collection.

**SFARV – “Forager” (potential)**

1. Unit for cleaning large areas of hazardous materials. System has a 4-axis arm with 50 pound pickup end-effector capability, secondary sensor arm to pin-point the material to be picked up an storage bin. Usage, clean-up of contaminated materials after an explosion. Clean-up of military live fire range for depleted uranium projectiles.
2. GPR – Ground Penetrating RADAR automated searching and mapping. Usage; body searching and preconstruction site mapping.
3. Water/chemical sprayer.
4. Street/Parking lot line painter.
5. Cobble stone driveway installer.
6. Civilian/Military land mine sweeping & disposal.

**SBARV – “Buster” (under consideration)**

1. **cLS-SB-ARM4** – A medium/heavy duty 4-axis robotic arm. Unit has changeable end-effectors with a maximum lift weight of 225 pounds. Current reach under consideration is 16 foot. Usages range from dry stack block wall building, rubble removal. Storage yard loading/unloading or factory materials movement.
2. **cLS-SB-TENDER** – Light duty flat bed hauler, projected 2500 pound payload. Uses are storage yards for material movement, sand bag hauler, factory material mover, construction areas for material delivery.
3. **cLS-SB-ADSRs** - Autonomous Disaster Search & Rescue System – This is a medium system with 10 “Vole-Bots” for searching. The “Vole-Bots” are linked back to the Forager via wireless/radio. An option will allow a single Vole-Bot to be attached to the Forager via fiber optics for large scale video collection.

**SBARV – “Buster” (potential)**

1. Unit for cleaning large areas of hazardous materials. System has a 4-axis arm with 50 pound pickup end-effector capability, secondary sensor arm to pin-point the material to be picked up an storage bin. Usage, clean-up of contaminated materials after an explosion. Clean-up of military live fire range for depleted uranium projectiles.
2. GPR – Ground Penetrating RADAR automated searching and mapping. Usage; body searching and preconstruction site mapping.
3. Water/chemical sprayer.
4. Cobble stone driveway installer.
5. Forest Fire fighting, Unit will be able to fire retardant spray buildings or fire breaks in the path of a fire.
6. Civilian/Military land mine sweeping & disposal.

### SGARV – “Goloth” (under consideration)

The c-Link Systems Omni-chassis is a fully integrated physical body that leaves the functionality to the immeasurable imagination of the customer. This system also allows for its job function to be rapidly changed predicated on the requirements at hand.

### SGARV – “Goloth” (potential)

1. Unit for cleaning large areas of hazardous materials. System has a 4-axis arm with 50 pound pickup end-effector capability, secondary sensor arm to pin-point the material to be picked up an storage bin. Usage, clean-up of contaminated materials after an explosion. Clean-up of military live fire range for depleted uranium projectiles.
2. GPR – Ground Penetrating RADAR automated searching and mapping. Usage; body searching and preconstruction site mapping.
3. Water/chemical sprayer.

### Conclusion

As shown the variation in payload functionality is broad and in the majority of cases saleable. The only real limitation would be the imagination of the user.

### About the Author

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