



“SWAMPED”

NEED

Defense POW/MIA Accounting Agency (DPAA) archeological teams need innovative wetland mitigation methods for safe recovery operations.

TAM

The DPAA has a global inventory of over 80,000 MIA, ~39,000 recoverable personnel.

RESEARCH

Total team interviews: 51



“SWAMPED” TEAM



Shane Jinson

BA Biology | PhD Biology & Society – History & Philosophy of Science student at ASU
Marine biology, genotyping/phenotyping, developmental biology.

[LinkedIn](#)

TEAM ROLE: External interviews, DPAA interviews, biological/environmental research.



Shivaani Methuku

BS Computer Science at ASU

Nursing assistant, Google Cloud Platform, Software engineering, Object oriented programming & data structures

[LinkedIn](#)

TEAM ROLE: DPAA interviews, DIN posting, software research & development



Travis Andren

BS Industrial Design | MS Environmental Policy Mgmt. | MS Innovation & Venture Development at ASU

Expertise: Industrial Design – New Product Development; Hydrogen Energy Systems; Circular Economic Strategies; User Centered Design/Design Thinking; Sustainable Policy Development

[LinkedIn](#)

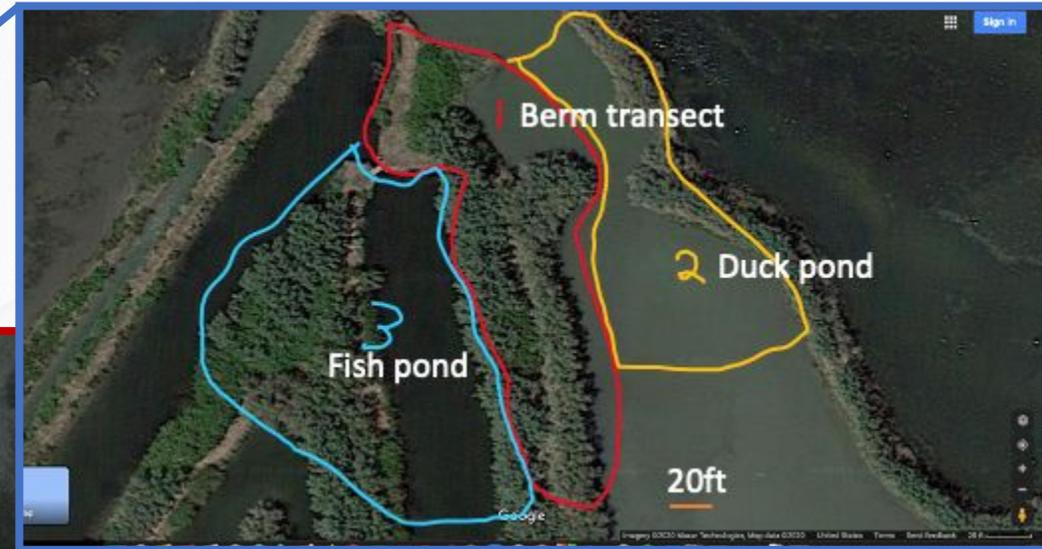
TEAM ROLE: DPAA interviews, External interviews, weekly progress summaries & concept visualization.

DPAA H4D PROBLEM STATEMENT:

- ***DPAA needs to mitigate the complex environmental conditions of site 2711 in Grado, Italy to conduct excavations.***
- ***Needs area access and establishment of load-bearing surfaces for equipment and teams***

SWAMPED TEAM:

“Ok, we need an equipment platform for a wetland environment. Does this exist? Let's talk with some experts and find out.”



Google Maps aerial images of Site 2711 - Grado region, Italy.

The Mission Model Canvas

Mission/Problem Description:
DPAA-WETLANDS

Designed by:
"SWAMPED"

Date:
FALL 2020

Version:
1.0

<p>Key Partners</p> <ul style="list-style-type: none"> • REDUCTION OF RISK • Recovery Site Landowner • ACQUISITION OF RESOURCES • Regional Universities <ul style="list-style-type: none"> • Professors • Students • Global Contractors • Local Italian Contractors • OPTIMIZATION • SALESFORCE SUPPORT & ENGINEERS • DPAA I.T. DEPARTMENT 	<p>Key Activities</p> <ul style="list-style-type: none"> • PRODUCTION • H4D TEAM: COMPILE POTENTIAL PARTNERS FOR 2711 • H4D TEAM: COMPILE POTENTIAL EQUIPMENT/INNOVATION FOR 2711 • H4D TEAM: PRODUCE WORKS-LIKE PROTOTYPE OF PORTAL • DPAA TEAM: INTEGRATE SF ASSETS INTO PORTAL DEVELOPMENT • PROBLEM SOLVING • RAPID ONBOARDING OF 2711 REGIONAL PARTNERS • PARTNER INVENTORY ANALYSIS • SF ENGINEER INTEGRATION (DPAA) • PLATFORM/NETWORK • DPAA I.T. USER PORTAL DEVELOPMENT & ASSET INVENTORY CREATION 	<p>Value Propositions</p> <ul style="list-style-type: none"> ▲ "Get the job done" – effective recovery of human remains & artifacts ■ "Get the job done" – effective restoration of site – flora/fauna & infrastructure ◆ "Performance" – achieving optimal recovery within the given timeframe ◆ "Risk reduction" – eliminating the risk of problem/solution failure – compromising effective recovery ● "Accessibility" – providing current & future technology access to DPAA team members ● "Cost Reduction / Adherence" – Sticking to the budget for the site. ■ "Personnel risk reduction" – ensuring safety and long-term well being of team members during and following activities 	<p>Buy-In & Support</p> <ul style="list-style-type: none"> • Carabinieri paramilitary organization • Regional permitting agencies – host nations • DPAA Leadership - Rocky • Site Landowner, tenants, subletters • Regional partner universities/agencies • Regional contractors • DPAA I.T. 	<p>Beneficiaries</p> <ul style="list-style-type: none"> • Servicemember Families • Recovery Site Landowner • DPAA Organization <ul style="list-style-type: none"> ○ Deputy Dir. Rocky Gillette ○ "Partnerships & Innovation" Division (P&I) ○ Primary Investigators (PI) ○ "SRE" Scientific Recovery Expert ○ Forensic Anthropologist ○ Team Leader / Sergeant ○ Linguist ○ Medic ○ Life Support Technician ○ Forensic Photographer ○ Communications Technician ○ Unexploded Ordnance Disposal Technician ○ Mortuary Affairs Specialist • Partner Universities ○ Professors ○ Students • Partner Contractors
<p>Mission Budget/Cost</p> <ul style="list-style-type: none"> • Variable – determined by building blocks of time, # of people, and specialty support. • Changes site to site • 3.6 million dollars quoted by the Army CoE's 2016-17 estimate of cost for an investigation/excavation typical for this complex environment. This could very well be an overestimate. • It is hoped that with the key activities carried out and local contractors incentivized to finish early, a "second opinion" for the proposed budget will be significantly less. • "Sometimes you have to throw money at the landowner." Dep. Dir. Gillette 		<p>Mission Achievement/Impact Factors</p> <ul style="list-style-type: none"> • [Complete vetting on all partners & contractors] Select completely vetted partners/contractors for site. • Incentivized partners/contractors to expedite excavation within timeline & budget. • Avoid "Unauthorized Commitments" • Adhere to ANAB SOPs & Maintain All Safety Protocols • Adhere to Host Nation Permits • Excavate sites until everything is found. • COMPLETE PARTNER DIRECTORY INTEGRATION WITH ASSETS IDENTIFIED & MAINTAINED BY PARTNERS 		

“SWAMPED” PRELIMINARY INTERVIEWS:

- **Focused on the process of site planning, organization structure, and equipment identification & logistics.**
- **We learned that the DPAA “Partnerships & Innovation” department attempts to keep informed on emerging innovations, but have no existing conduit to efficiently connect information to site planners.**

It soon became clear...

there are multiple existing technologies that can solve the 2711 platform problem
...but the awareness of innovative technologies is siloed within the agency.

**This led to our 1st MVP:
An organizational system for DPAA technologies**

1ST MVP



“I have boxes of brochures for technologies in my office. No one even knows what’s in there except me.”

- Dr. Joshua Toney on technology identification.

“Organization is hard. I wish there was an algorithm for equipment sourcing & placement for specific problems.”

- Kara Davis on sorting of known equipment.

“It would be great to know the exact contacts at a partner institution.”

- Ryan Bradley on partner listings, specific to SREs.

“We are not a partnership-based agency today...but we are trying to become one.”

- Dep. Dir. Rocky Gillette on the importance of global partnerships.

We kept interviewing DPAA agents, partners, and external experts. Our MVP evolved from beneficiary feedback to integrating prospective partners and innovative equipment within the virtual inventory.

2nd MVP



“If we don’t use them next time, he might slash our tires.”

- Josh Frank on the importance of regional politics & partnerships.

“I can’t swing a metal detector in Romania.”

- Josh Frank on regional technology permitting.

3rd MVP



“It took 2 years to put a mag on a drone. If SCRIPPS had done it, it’d be here in 6 months.”

- Jeneva Wright on the importance of partner validation.

“You can’t just go down the street and buy a drone with LiDar... the government is a huge pain in the ass when adopting new technology.”

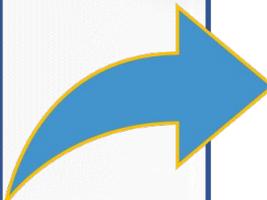
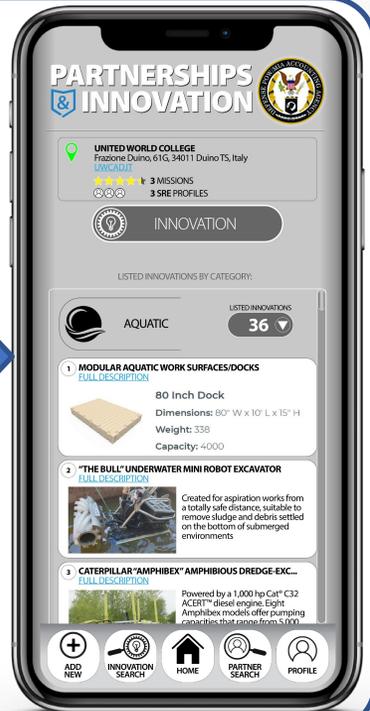
- Kelley Esh on the adoption of leading technology.



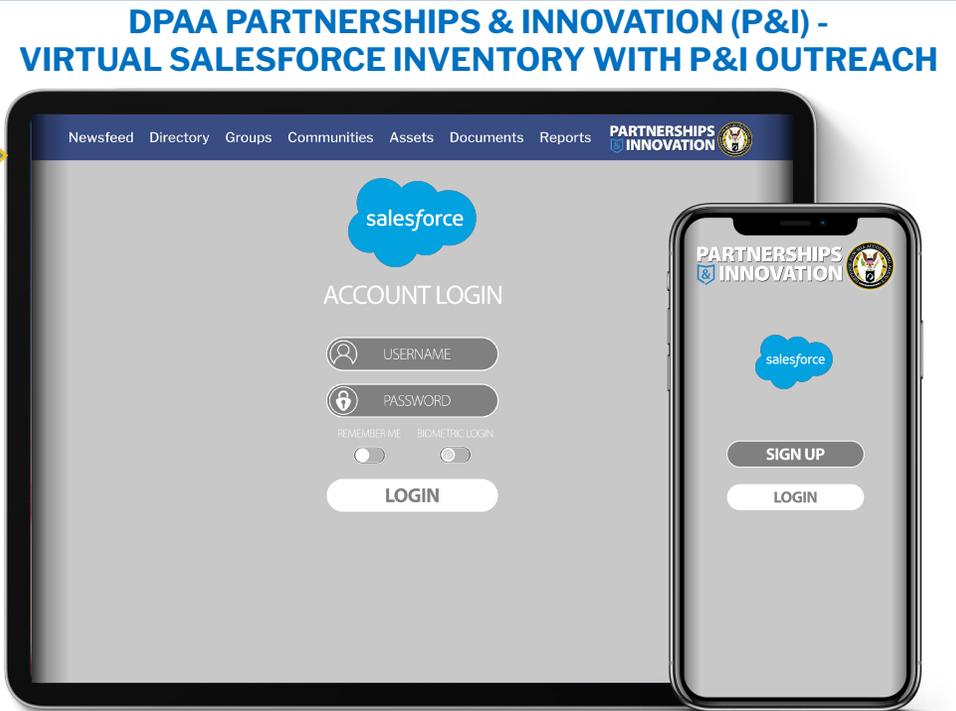
H4D concept features compatible with Salesforce

But we still needed to address Site 2711...

...so we've been compiling an inventory of potential partners within the geographic region of northern Italy, and their associated equipment.



Final MVP



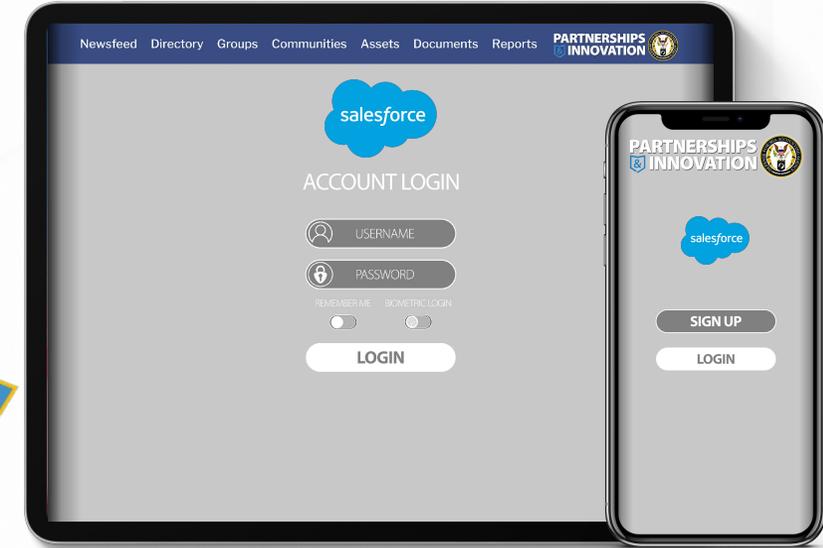
3rd MVP

“SWAMPED” MVP:

DPAA PARTNERSHIPS & INNOVATION (P&I) - VIRTUAL SALESFORCE INVENTORY WITH P&I OUTREACH

Enabling agents to identify and evaluate existing partners and associated innovations will aid in both site 2711 and future missions through:

1. Creating awareness of innovative solutions,
 2. Aiding in problem-solution fit, and
 3. Effectively easing the planning process.
- Leverage existing SF infrastructure
 - Build member profiles
 - Members self-maintain respective asset inventories



	TECHNOLOGY CATEGORY	TECHNOLOGY NAME	MANUFACTURER	WEBSITE	KEY ATTRIBUTES	IMAGES	NOTES
7	Private Contractors	Nautilus Srl P&I	OGS (River works, defense, hydraulic works and reclamation), OS 21 (special structures) works (BO UN 45001, 2018) (management of owners' safety) and (semi) 9001: 2015	http://www.nautilusvercelle.it/ve/summit.html			
8	Nautilus Srl	MOULDER DOORS	ETNOPOS	http://www.etnopo.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Nautilus Srl Partnerships & Innovation 2020. This is a virtual inventory of the company's assets. The inventory is a list of products and services offered by the company. The inventory is a list of products and services offered by the company.
9	Lavori Terrestri e Marittimi	AMP AIR EXHAUSTORS	LOC EMPILLAR	http://www.locempillar.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Nautilus Srl Partnerships & Innovation 2020. This is a virtual inventory of the company's assets. The inventory is a list of products and services offered by the company. The inventory is a list of products and services offered by the company.
10	SOMT (Società Opere Marittime Idrauliche Tirozio)	GM Hydro-SUPUS	GENERAL MOTORS	http://www.gm.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		SOMT has implemented a company quality management system compliant with ISO 9001: 2000 standards. A controlled management system not only guarantees maintaining quality but also a continuous incentive for improvement. Therefore each goal is achieved because SOMT the starting point from which a new goal is set (ON-SAS 1000) is another certification awarded to SOMT for its ability to occupy a health and safety system, which makes it possible to ensure the safety of its employees and improve their performance.
11	Impresa Pasqual Zemirol	SHERP THE ARK	SHERP GLOBAL	http://www.sherp.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Impresa Pasqual Zemirol is a company that operates in the maritime and industrial sectors. The company is a company that operates in the maritime and industrial sectors. The company is a company that operates in the maritime and industrial sectors.
12	Southern Italian Contractors	THE SULL - UNDERWAY BIGSHIP	GENOTO	http://www.genoto.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Operare con competenza nel settore complesso delle costruzioni marittime e industriali, che per gli interventi di manutenzione e ristrutturazione e industriali.
13	MARITIME	INFLATABLE COPPERDAM	DAM CORP	http://www.damcorp.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Attenzione di Qualità che sia esecuzione di lavori pubblici sia servizi ai clienti del DPR 207/00 art. 17 comma 10.
14		DYNAMIC EQUILIBRIUM DEWATERING SYSTEM	VIVANTER TECHNOLOGIES, LLC	http://www.vivanter.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Attenzione di Qualità che sia esecuzione di lavori pubblici sia servizi ai clienti del DPR 207/00 art. 17 comma 10.
15		PINGER SUB BOTTOM PROFLER	KNULSEN	http://www.knulsen.com/	INDUSTRIAL 55255PHS 084.0504.91.000 02.76.11.01.15.18		Attenzione di Qualità che sia esecuzione di lavori pubblici sia servizi ai clienti del DPR 207/00 art. 17 comma 10.

SWAMPED MVP FULFILLMENT
 PARTNERSHIPS & INNOVATION
 VIRTUAL SALESFORCE INVENTORY

GET

INTERNAL BUY-IN & REFINEMENT

- Initial partners are populated from existing Salesforce database, building upon existing capabilities and functions of Salesforce
- Current partners are onboarded with innovation inventory process.
- App integration trialed & evaluated for bugs and limitations.
- Security clearances obtained and adhered to.

KEEP

ENGAGEMENT FROM GLOBAL PARTNERS & D.O.D. DIVISIONS

- Partners need to keep innovation inventories updated, adding new innovations as they come online.
- Partners need to maintain SRE staff lists and accreditations.

GROW

INCREASE CAPABILITY TO RECRUIT NEW PARTNERS

- Incoming partners begin MOU process via applications.
- Applicants receive Code from P&I rep. to begin process.



3-YEAR COST FLOW TIMELINE

COST	YR 1	YR 2	YR 3	ONGOING / YR
LABOR				
(2) SALESFORCE ENGINEERS + ANNUAL MAINTENANCE	\$250,000 ¹	\$ 50,000	\$ 50,000	\$ 50,000
(1) PARTNERSHIPS & INNOVATION P.O.C. FOR INVENTORY PROGRAM	\$100,000 ²	\$100,000 ²	\$100,000 ²	\$100,000 ²
(1) TEMPORARY TRANSLATOR	\$ 75,000 ³	\$ 75,000 ³	\$ 75,000 ³	\$ 25,000 ³
OPERATIONAL EXPENSE				
TRAVEL & LODGING (ANNUALLY Est. \$15,000/mo)	\$180,000	\$180,000	\$180,000	\$180,000
SALESFORCE PUBLIC SECTOR LICENSE BUNDLE (ANNUAL SUBSCRIPTION)	\$ 30,000 ⁴	\$ 30,000 ⁴	\$ 30,000 ⁴	\$ 30,000 ⁴

SUBTOTAL

\$635,000

\$435,000

\$435,000

\$385,000



GET
INTERNAL BUY-IN & REFINEMENT

KEEP
ENGAGEMENT FROM GLOBAL PARTNERS & D.O.D. DIVISIONS

GROW
INCREASE CAPABILITY TO RECRUIT NEW PARTNERS

PHASE 0: H4D DESIGN

PHASE 1: DPAA | SF CODING & PARTNER OUTREACH

PHASE 2: DPAA PARTNER FULFILLMENT

PHASE 3: DPAA CONTRACTOR OUTREACH

PHASE ∞: DPAA CONTINUED OUTREACH





DUAL-USE OPERATIONS POTENTIAL

- ▣ **COMPETITIVE CONTRACTOR BIDDING TO REDUCE COSTS**
 - IN-APP CONTRACT BIDDING

- ▣ **B2B PARTNER/CONTRACTOR EQUIPMENT LEASING**
 - GLOBAL INVENTORY OF LEASABLE EQUIPMENT

- ▣ **GRANT PROGRAM IDENTIFICATION – EQUIPMENT INNOVATION & DPAA TESTING POTENTIAL**



“SWAMPED”



Next Steps:

- DPAA Personnel utilize H4D results to inform case progression of case 2711 in Grado, Italy (2020-2023)
- DPAA IT Department development of Salesforce user portals [Est. completion: 1/2021]
- DPAA IT Department integration of asset inventory capabilities [2021-2022]

Questions?

Thank you!