



ARS

Applied Research Solutions

SMD Symposium 2024

Company Overview / Arkcloud Solution

COMPANY OVERVIEW

Customer Focused. Mission Driven

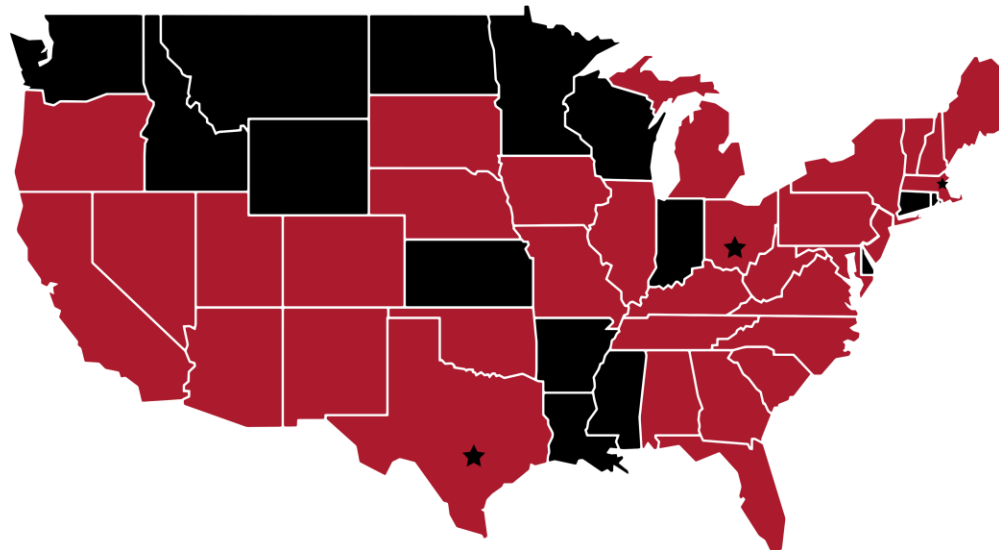
Applied Research Solutions delivers innovative, agile, state-of-the-art national security solutions.

What we're known for:

- Outstanding customer support through personalized & proactive assistance
- Deep expertise in digital transformation
- Cloud, agile software development (DevSecOps), data science, & network modernization
- Recognized leader in cryptographic & cybersecurity resilience across the DoD
- Tip of the spear offensive & defensive cyber operations support for USAF

By the Numbers

- \$260M Revenue base
- 12 years in business
- 820 Employees
- 29 Federal Contracts
- 38 states



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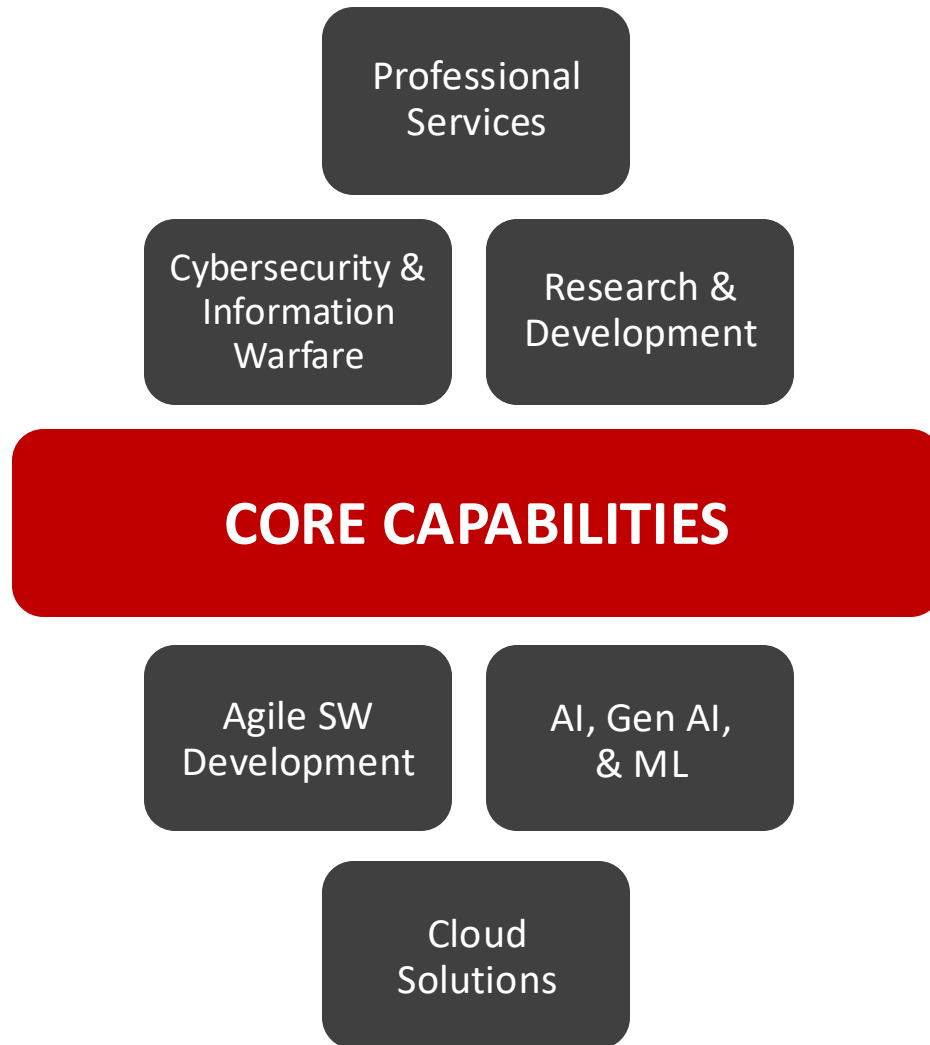
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RECOGNIZED LEADER

--- THE BUSINESS JOURNALS ---



ENTERPRISE CORE CAPABILITIES



Professional Services: We deliver mission critical support to the DoD in areas such as acquisition program management, education & training, financial management, and logistics management

Research & Development: We are committed to driving innovation and delivering transformative solutions in a wide range of areas, including machine learning, autonomy, cyber-physical systems, and directed energy

Cybersecurity & Information Warfare: ARS is at the forefront of support for DoD space, intelligence/ISR, information operations, spectrum warfare, and cyberspace operations to fulfill the National Defense Strategy

Agile Software Development: ARS delivers superior solutions through our unique approach to Agile software development and DevSecOps

Cloud Solutions: We maintain partnerships with major cloud service providers to build secure deployment environments that meet your needs

Artificial Intelligence, Gen AI, & Machine Learning: We are Gen AI researchers and enablers supporting AFRL in leading Gen AI & Machine Learning in cloud, on-prem, and classified environments

THE ARS DIFFERENCE...

- Small-Business **Agility** with Large-Business **Ability**
- More than a glossy brochure
 - Proven agile digital transformation, modernization, & cyber security past performance
 - USCYBERCOM, AFRL, AFIT, NGA, DIA
 - Numerous IRAD investment efforts focused on digital technology solutions
- We bring the right talent, experience, **and** strong established partnerships with AWS and Microsoft Azure
- **Reliable** ability to staff large efforts with qualified TS/SCI cleared professionals
 - 450 current TS/SCI or above cleared professionals
 - Transitioned 750 incumbent personnel within 120-day transition phase
 - >90% employee retention rate
 - Facility Clearance: TS/SCI
- Organic talent acquisition team of six full-time recruiters!
 - Leveraging DoD SkillBridge for top talent!



Contract Vehicles & Prime Contracts

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Contract Vehicles

- GSA OASIS SB, Pools 5A, 5B, & 6
- GSA Multiple Award Schedule
 - 541330ENG; 541380; 541420; 541715; 54151HACS; OLM
- Navy Seaport – NXG IDIQ
- EWAAC IDIQ
- AFLCMC/XA IDIQ

Key Prime Contracts

- AFLCMC/HN (C3I&N; ~1,000 FTEs; \$1B)
- SLAKE (AFRL/RV; Sensing/Learning R&D)
- CROWS (Cyber Resiliency Office f/ Weapons Systems)
- AFIT (Graduate Education & Research Support)
- DLA (Logistics)



CUTTING EDGE CYBER EXPERTISE

- **PEO C3I&N (AFLCMC/HN):** 450+ personnel (75% TS/SCI) supporting

CYBERCOM, 16AF, & 30 Special Access Programs – Key programs include:

- Unified Platform (UP)
- Platform One (P1)
- Defensive Cyber Systems (DCS)
- Offensive Cyber Operations (OCO)
- Joint Cyber Command and Control (JCC2)
- Black Label (OCO SW Factory)



*Baking Cyber In
Cyber Focus Teams
Contract Language*



*POAM Oversight
Data Reporting
Risk Reporting*

- **Cyber Resiliency Office for Weapon Systems (CROWS):**

- Ensuring the DAF can perform its mission in cyber contested environments
 - Led development of the System Security Engineering (SSE) Cyber Guidebook
 - Conducted Cyber Vulnerability Assessments of 48 major WS under NDAA 1647 for the CROWS Program
 - Developed virtual systems integration lab, prototypes, and vulnerability data analytics tools



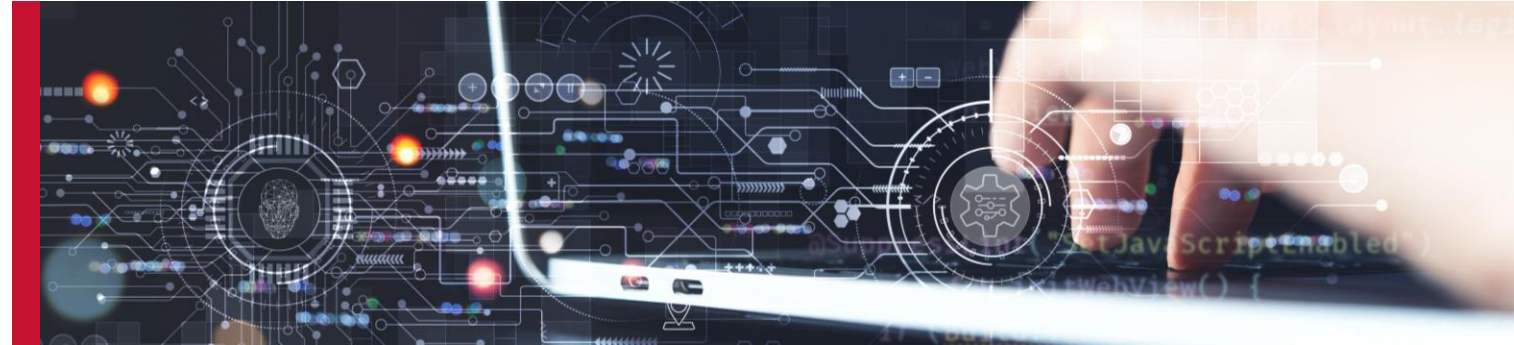
USSF MISSILE DEFENSE MODERNIZATION

- **Contract: AFLCMC EPASS TO 70**

- PoP: 18-Jul-23 – 17-Jul-28
- BY ARS Value: \$1,352,535
- ARS is a sub to Odyssey Systems

- **Scope of Support:**

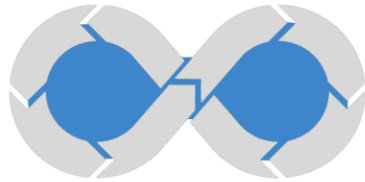
- The scope of this TO supports USSF and FMS to include cross-cutting and surge support. This A&AS contract provides SSC/SZQ with a broad range of professional acquisition, engineering, scientific, research, financial and administrative capabilities to execute effective and responsive integrated program management of research, development, production, and lifecycle acquisition and sustainment activities.
- ARS provides the Digital Engineering (DE) SME Lead for SZQ structuring DE Strategy and Implementation for the Delta to include Digital Engineering Ecosystems (DEE), Tools, Training, and Process/Guidance/Governance.
- ARS provides Radar Engineers, Software Engineers, and Cybersecurity experts to support sustainment and modernization of Missile Warning, Missile Defense, Space Domain Awareness and Command and Control Systems to Protect the Homeland and our Allies.



CLOUD CAPABILITIES / PARTNERSHIPS



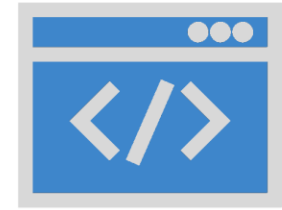
**Cloud
Architecture**



DevSecOps



**ATO & Cyber
Operations**

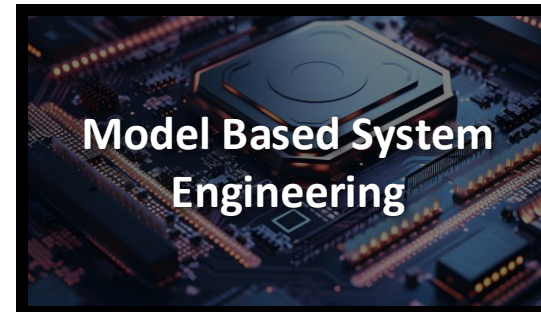
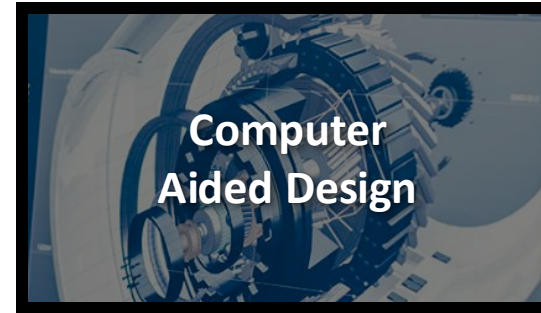
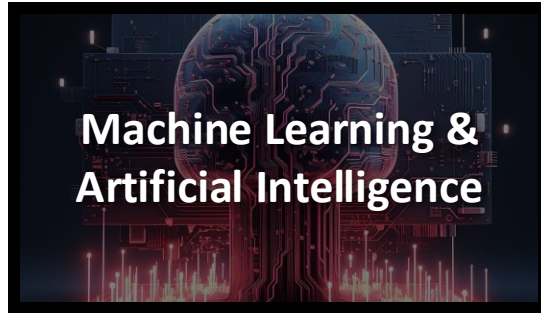


**Application
Migration**

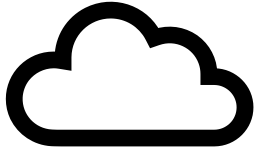


ARKLOUD™

A managed cloud environment, secured to NIST 800.171 & NIST 800.53 standards



ARKLOUD TECHNOLOGY TYPES



Cloud Technologies

provide the basis of the architecture



DevSecOps

tools provide scanning, CI/CD, and IAC



End User Services

are web based / SaaS technologies designed for direct usage



Developer Resources

provide capabilities like databases and storage



VDI/VM Applications

are software installed on the virtual machines created by users



Government Services

tools and Services built and used by the government

ARKLOUD BENEFITS

Single Sign On

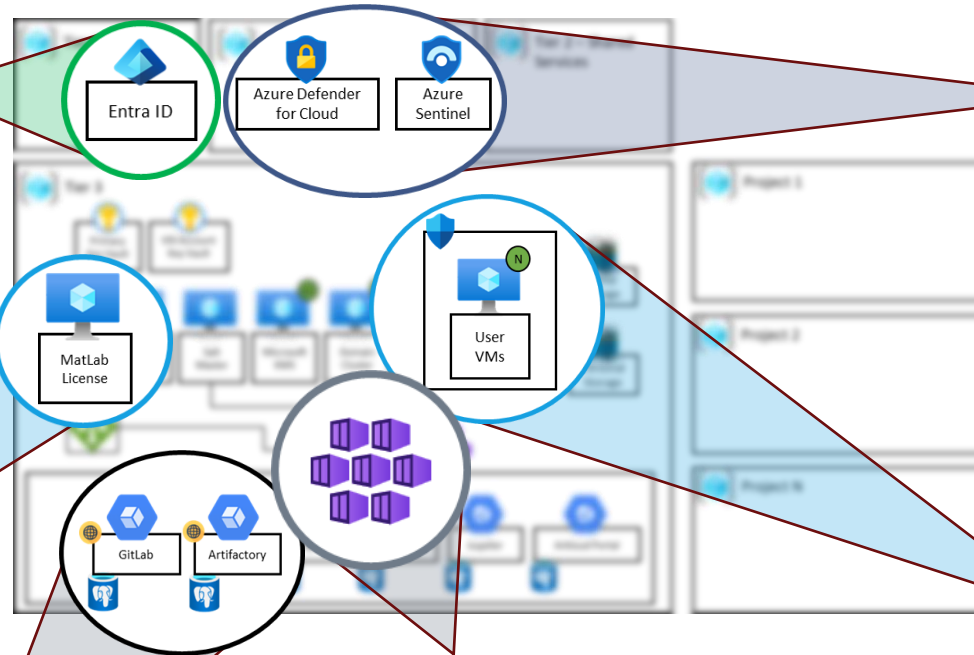
- Convenience of logon by MFA, CAC, email validation, etc.
- Enhanced Security by reducing the need for multiple passwords
- Centralized Authentication managing user access and permissions more efficiently.
- User Experience improved by streamlining login in process.

Software as a Service

- Reduced upfront costs in a shared cost model
- Rapid deployment
- Scalability and integration
- Always the latest versions
- Access to:
 - GitLab
 - Artifactory
 - Jira
 - Confluence
 - Matlab
- Logon via SSO

DevSecOps Pipelines

- Proactive and collaborative approach to more secure software
- Reduces security incidents
- Delivering more secure software



Kubernetes Infrastructure

- Container Orchestration
- Scalability
- High Availability
- Resource Utilization
- Rolling Updates and Rollbacks
- Self-Healing
- Service Discovery and Load Balancing
- Secrets and Configurations Management
- Multi-Cloud and Hybrid Cloud Support
- Resource Quotas and Limitations
- Extensibility
- Community and Ecosystem
- Declarative Configuration
- Continuous Delivery

Cybersecurity

- Threat Detection and Early Warning
- Rapid Incident Response
- Identifying Insider Threats
- Vulnerability Identification
- Compliance and Auditing
- Data Protection and Privacy
- Insight into Security Posture
- Threat Intelligence and Analysis
- Preventing Data Loss
- Continual Improvement
- Reducing Downtime and Business Impact
- Enhanced Trust and Reputation
- Cyber Team Continuous Monitoring & Reporting

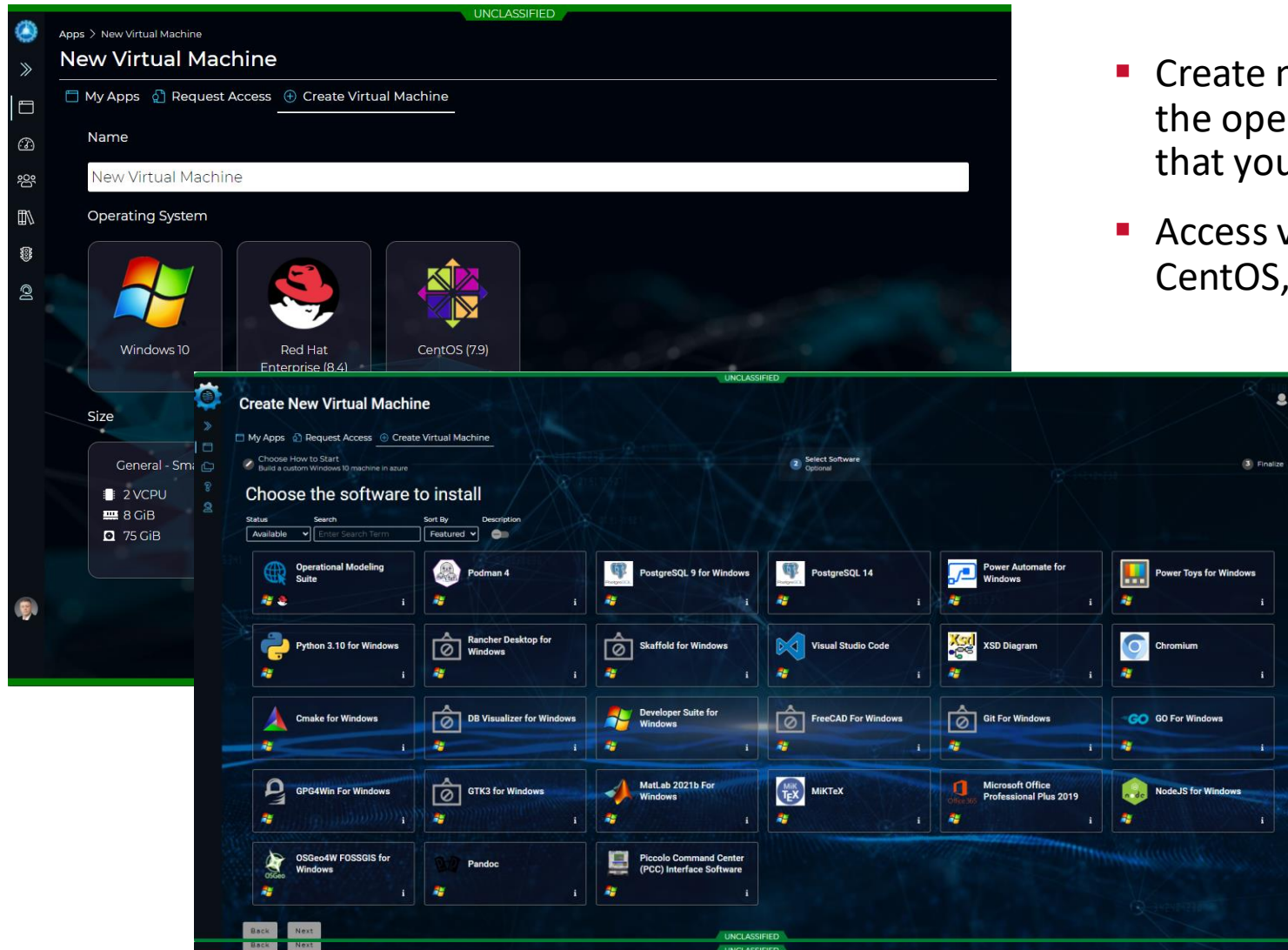
Virtual Desktops

- Offer flexible, centralized and enhanced security.
- Streamlines desktop management.
- Provides secure remote access to users.
- Hundreds of applications available to install
- Support for Windows 10 and 11
- Support for Linux

Infrastructure as Code

- Consistency and Reproducibility
- Scalability
- Faster Provisioning
- Reduced Human Interaction
- Version Control and Auditability
- Compliance and Security

SELF-SERVICE VIRTUAL MACHINES / VIRTUAL DESKTOPS



- Create new virtual machines by choosing the operating system, size and the software that you want
- Access virtual desktops for Windows 10, CentOS, and RedHat

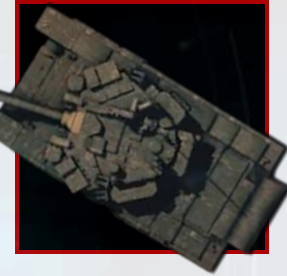
- Shared drives for data and applications
- Dynamically configured using SaltStack

State of the art Open-Source internal tools deployed for company use

- Large Language Model Implementations
 - Ollama, LLama3, Open-Webui
- Image Generation Implementations
 - Stable Diffusion 3, Easy-diffusion, Comfy-UI
- Customer facing research in model evaluation and implementations
 - 3D model generation
- Internal research projects funded to further improve and implement Generative AI



Generated Imagery



Generated models





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THANK YOU

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