

DEFENSE, GOVERNMENT AND IMMERSIVE TRAINING

SPARC

Immersive training authored in a browser and delivered to a headset or to an ordinary browser tab. It grew out of an Air Force SBIR we built from zero code under a prime, and the platform is ours.

<div>\$1.15M</div> <div>Phase II award, to the prime</div>	<div>14</div> <div>Months of performance, 2023 to 2024</div>	<div>5</div> <div>Asset types an author can place</div>	<div>2</div> <div>Delivery targets, headset and browser</div>
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THE PROBLEM

Immersive training is usually built as a set of one-off scenes. Changing a procedure means a developer, a rebuild and a release, so the person who knows the procedure cannot touch the training and the training falls behind the work it describes.

The second constraint is hardware. Content built for a headset reaches the people who have one, which in most organizations is a room, not a workforce.

SPARC separates the three things that usually get welded together: a media library, a lesson stored as data, and a renderer that reconstructs it. An instructor uploads media, places interactive elements against it and publishes. A learner opens that lesson in a VR headset or in a browser with no headset at all.

THE CONTRACT, STATED EXACTLY

AFWERX SBIR Phase II immersive training for the US Air Force, contract FA8649-23-P-0466, \$1,150,000, performed February 2023 to April 2024 and awarded to Quantum Interface LLC as prime.

Frank Robles was brought onto the proposal team and the proposal won. The work then started from zero code. He specified a team of six and, for a long stretch, built the application alone, then hired a Unity developer and added a part-time designer, and served as development lead throughout.

In his own words: after winning the SBIR, he took a product idea with zero code completed to a working solution, meeting or exceeding numerous deliverables for the Air Force. The delivered capability included gaze and motion control, so an airman with both hands occupied can move through a checklist.

Robles Industries was not the awardee and does not claim the contract as its own prime past performance. We put that sentence on the sheet because a government buyer will check, and because a vendor who overstates a role once will be assumed to have done it elsewhere.

WHAT CARRIED OVER, AND WHY IT IS THE POINT

Two things are proved by this record. The first is that a federally funded prototype can be carried into a product the firm owns, which is the path a research-to-commercial buyer is trying to walk and rarely sees walked.

The second is the shape of the thing we built. We build authoring tools rather than scenes. The separation between a media library, a lesson held as data and a renderer that reconstructs it is what lets a customer's own subject matter experts keep producing training after we leave, in a headset or in a browser, without a developer in the loop.

WHAT WE DO NOT HOLD

Robles Industries holds no socioeconomic certification, no FedRAMP authorization, no ATO and no NIST attestation, and claims none. What it has is delivery under a prime, a product line with a decade of production history behind it, and a principal who negotiates and administers the contracts himself.

HOW A LESSON IS AUTHORED

The authoring side is a web application. An author uploads assets tagged by type: 2D video, 360 video, image, PDF or audio. Every asset carries a name, description, internal notes, creator, publish date, version, a thumbnail that can itself be another asset, and a JSON block of asset events. Uploads go straight to object storage from the browser rather than through the application server.

A lesson is an augmented document: title, description, notes, version, view counter, author, last-modified-by, thumbnail, and a canvas asset that sets the backdrop. A 360 video puts the learner inside a scene; an image or a PDF gives a flat surface to annotate.

Onto that canvas the author places augment events, stored as JSON. A lesson also carries diagnostic and feedback parameter blocks, which is where assessment lives: what the learner is measured on, and what they are told in response.

HOW IT IS BUILT

A Django project with DRF, PostgreSQL, direct-to-S3 uploads, Docker for local work and an Elastic Beanstalk deployment configuration. The REST router exposes users, groups, assets and augmented documents, with a custom user model carrying training-specific role levels. The client is Unity and C#, building to WebGL today.

SPARC was built after the contract ended, on the ideas the Air Force work proved out, with help from the same Unity developer. It is a new codebase, owned outright by Robles Industries.

Django Django REST Framework PostgreSQL Amazon S3 Unity C# TextMesh Pro WebGL Docker
Elastic Beanstalk

STATE TODAY

A working demonstration, shown at a military conference in Canada, drew interest, and a major defense prime has asked to see it. Completing the application is the next step, and we say so plainly. The backend is Django, and the Unity project as it stands builds for the browser, with the headset target needing its XR package restored before a headset demonstration.

WHAT WE CAN START ON

Procedure and safety training in AR or VR with an authoring tool your own instructors use. Browser-delivered immersive content where headsets are not practical. Subcontract delivery under your prime, or prototype and proposal work at SBIR stage.

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