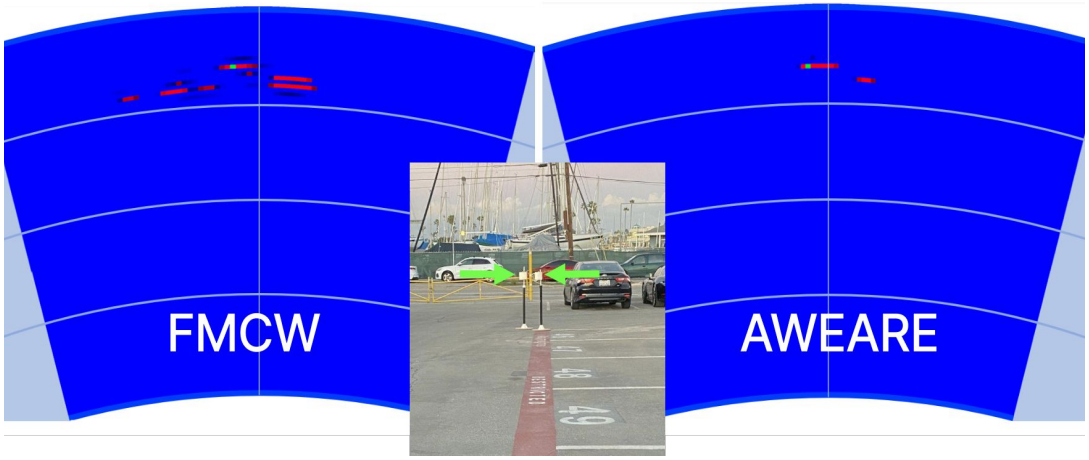
Breakthrough Radar Technology to Improve Driverless Vehicle Safety

AWEARE™
GLOBAL AG

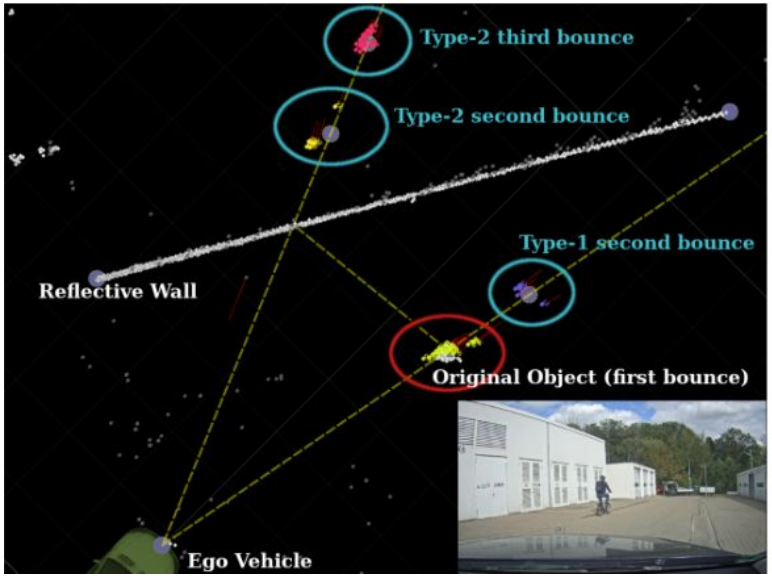


Update - July 2025

How AWEARE Can Reduce A.I. Workload

AWEARE minimizes ghosts

- 80% reduction with low-cost parts
  - 95+% with expensive modules
  - Compared vs. FMCW waveform
  - Same 24 GHz hardware@250 MHz



COTS 77 GHz Radar (Urban) [1]

- 1 million non-stationary targets
  - 62% – actual targets
  - 12.5% – traceable multipath ghosts
  - 25% – other types of ghosts (math-based, interferences etc)
- 38% false positive targets (traceable)
  - AWEARE demonstrated reduction of 80% to 95+% of false positives
- 34 million stationary objects eliminated (background clutter, walls, curbs etc)

[1] Florian Kraus et. al., “The Radar Ghost Dataset – An Evaluation of Ghost Objects in Automotive Radar Data”, 2021

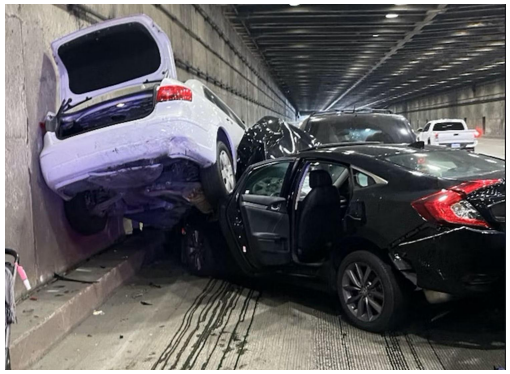
AWEARE Benefits Disproportionately

Reduce A.I. scene building

- AWEARE + LiDAR sensor fusion (e.g. Mobileye) or AWEARE + camera fusion (others) may reduce or eliminate the need for A.I. scene building [2]

Rules based filters & high-speed specular reflection calculators require far less processing than scene building

- Out of the top 6 ghost sources, specular reflections is the only one that AWEARE may lack theoretical basis or empirical data for ghost minimization



[2] Liu, Y., Wang, F., Wang, N., & Zhang, Z.-X. (2023). Echoes Beyond Points: Unleashing the power of raw radar data in multi-modality fusion. In NeurIPS 2023 Conference Proceedings

[3]https://www.autoevolution.com/news/phantom-braking-crash-videos-shows-how-dangerous-and-avoidable-the-tesla-issue-is-208160.html

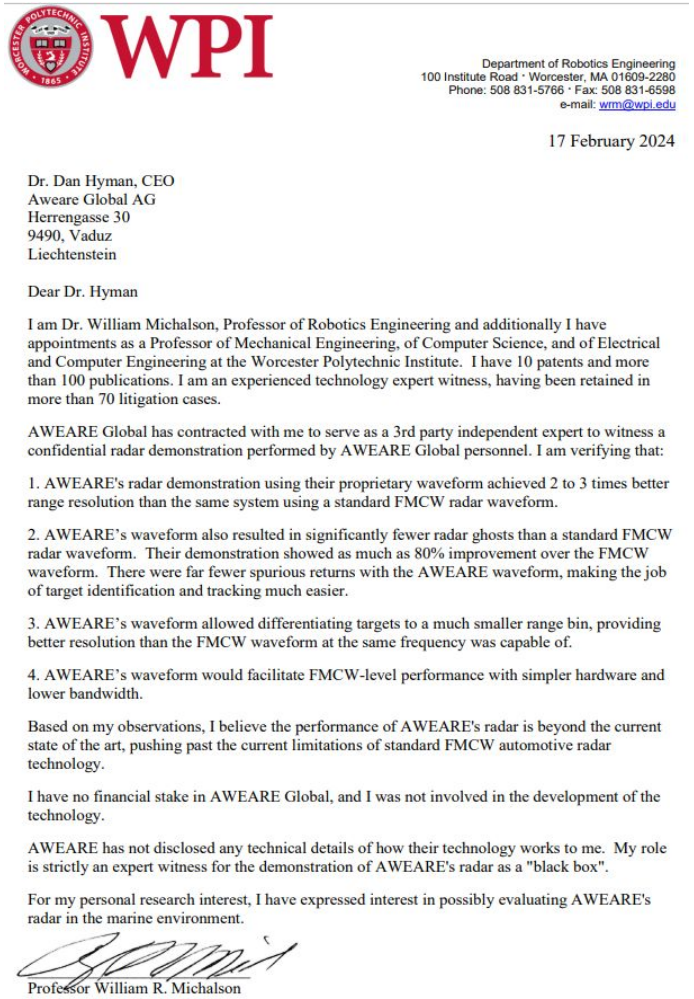
Verified by 3 Independent Experts

Improved resolution & Reduced false positives

- 2-3X higher range & velocity resolution
- 80% (using automotive components) to 95+% (using expensive modules) reduction in false positives

Letter from Professor William Michalson verifies performance

- States that the technology is beyond the state of the art
- Litigation expert witness for radar (~70 cases)
- Understands the importance of telling the truth



WPI

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17 February 2024

Dr. Dan Hyman, CEO
Aweare Global AG
Herrengasse 30
9490, Vaduz
Liechtenstein

Dear Dr. Hyman

I am Dr. William Michalson, Professor of Robotics Engineering and additionally I have appointments as a Professor of Mechanical Engineering, of Computer Science, and of Electrical and Computer Engineering at the Worcester Polytechnic Institute. I have 10 patents and more than 100 publications. I am an experienced technology expert witness, having been retained in more than 70 litigation cases.

AWEARE Global has contracted with me to serve as a 3rd party independent expert to witness a confidential radar demonstration performed by AWEARE Global personnel. I am verifying that:

1. AWEARE's radar demonstration using their proprietary waveform achieved 2 to 3 times better range resolution than the same system using a standard FMCW radar waveform.

2. AWEARE's waveform also resulted in significantly fewer radar ghosts than a standard FMCW radar waveform. Their demonstration showed as much as 80% improvement over the FMCW waveform. There were far fewer spurious returns with the AWEARE waveform, making the job of target identification and tracking much easier.

3. AWEARE's waveform allowed differentiating targets to a much smaller range bin, providing better resolution than the FMCW waveform at the same frequency was capable of.

4. AWEARE's waveform would facilitate FMCW-level performance with simpler hardware and lower bandwidth.

Based on my observations, I believe the performance of AWEARE's radar is beyond the current state of the art, pushing past the current limitations of standard FMCW automotive radar technology.

I have no financial stake in AWEARE Global, and I was not involved in the development of the technology.

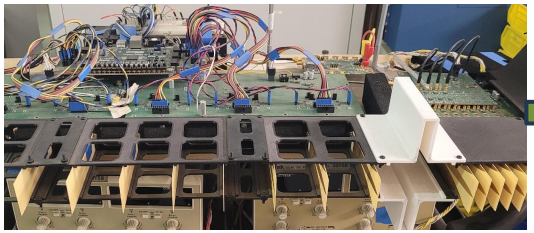
AWEARE has not disclosed any technical details of how their technology works to me. My role is strictly an expert witness for the demonstration of AWEARE's radar as a "black box".

For my personal research interest, I have expressed interest in possibly evaluating AWEARE's radar in the marine environment.

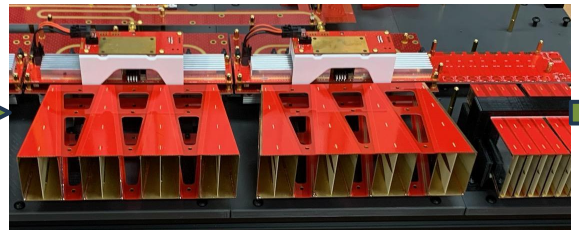
Professor William R. Michalson

Milestone/Achievement History

- **Historical milestones verified using commercial parts then validated by experts**
  - **2016 Original proof of concept demonstrating scalability: pulse radar at 2 GHz (low frequency) - 95+% reduction in false positives using expensive modules**
  - **2021 Lab prototype using automotive chipsets for trucking & light rail applications**
  - **2023 Integrated "parking lot" demonstrator for algorithm work & validation**
  - **2025 Revising for portability and increased range for strategic demonstrations**
- **Business development milestones preparing for major fundraising & spinoffs**
  - **2021 Outreach for light rail system requirements**
  - **2023 Corporate architecture structured to facilitate global spinoffs & fundraising**
  - **2024 BDO valuation analysis ($100M)**
  - **2024 AWEARE Global STO approved by Financial Market Authority of Liechtenstein**
  - **2025 Pursuing export approval & civilian aerospace opportunities in Asia**



2021



2023

Next Generation Underway 2025

Development Roadmap

Year	Frequency/Mode	Waveform	Ghost Reduction	Resolution
WW2	<300 MHz/CW	FMCW	None	Baseline
Commercial Automotive Radar	24 GHz/CW	FMCW commercial	Baseline	Baseline
2016 (expensive)	2 GHz/CW	AWEARE broadband	95+%	4X-6X
2020 (cheaper)	24 GHz/CW	AWEARE commercial	70%+	1.5X-2X
2023 (low cost)	24 GHz/CW	AWEARE commercial	80%	2X-3X
2025 (portable) in process	24 GHz/CW	AWEARE commercial	80% same waveform	2X-3X same processing
2026 (low cost) planned	24 GHz/CW	AWEARE+ next generation	90+% next generation	3X-4X optimized

Commercialize Perhaps Biggest Advance in Radar since World War II

Problem 1: Driverless tech is too costly due to expensive LiDAR & intensive AI processing

AWEARE Solution: Eliminate LiDAR or enable use of lower cost LiDARs depending on application. Reduce AI processor requirements by reducing false positives

Problem 2: Driverless tech accuracy & reliability are poor in bad weather due to shortcomings in radar sensor that is critical in poor weather conditions

AWEARE Solution: AWEARE increases range resolution by 2x-3x while reducing false positives by ~80% + enhancement roadmap (demonstrated 95% with fancy parts)

Problem 3: Large number of false positives from existing driverless sensors require AI to work really hard (may require faster higher-cost processors)

AWEARE Solution: See answer to problem 2

BE AWEARE, BE SAFE

Experienced Team

- **Founders are experienced entrepreneurs with successful exits (>1,000% ROI) and VC experience**

Daniel J. Hyman, Ph.D.
Radar & wireless

Mahesh Reddy
Aerospace executive

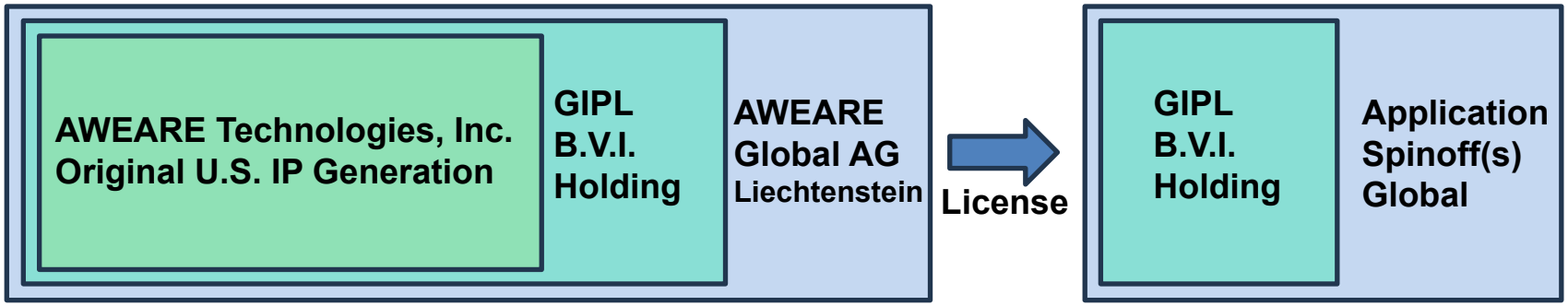
Mark K. Hyman
Software & A.I.

Tian Yren Tang
Government & Busdev

- **Previous exit funded initial technology development & demonstrations**
- **Team & early investors includes software, blockchain, and A.I. entrepreneurs including inventor of DRONEKILLER® deployed around the globe**

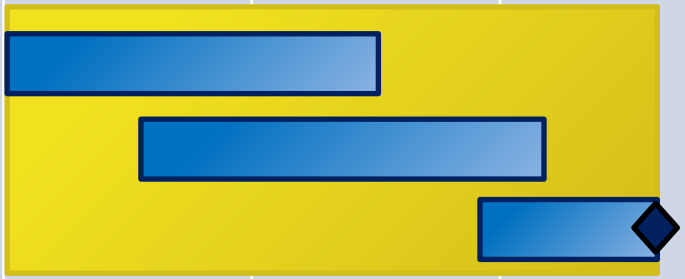
Corporate Structure

- **AWEARE Technologies, Inc. (U.S. California C-Corp)**
  - Developed original radar technologies
- **Global Innovation Partners Limited (B.V.I. Holding Company)**
  - Consolidates AWEARE Technologies, Inc. shareholders as voting block
- **AWEARE Global AG (Liechtenstein AG)**
  - Global partner-facing organization for commercializing technologies
  - Will raise STO funds and manages licensing strategies & partnerships
- **Application-Specific Spinoff**
  - Receives exclusive license for application(s) for commercialization
  - Effective localization for global business development



Automotive Timeline

	Y1	Y2	Y3	Y4	Y5
Automotive Demonstrator (Automotive Team w/Core Oversight)					
Fundraise & Partial Exit Opportunity (Core + Auto Teams)					
Automotive License or Partnership (Automotive Team)					



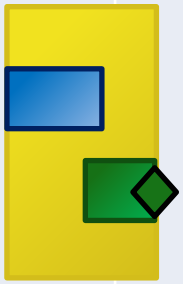
Transition to 77 GHz radio

Concept A.I. sensor fusion

Demonstrator field test ready

Generate prospectus

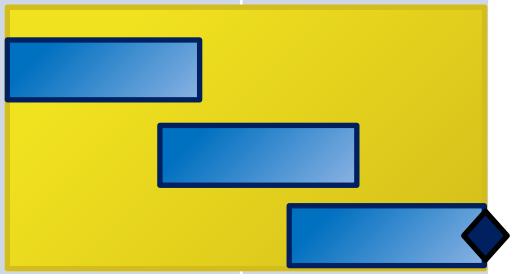
Fund (partial exit opportunity)



Business development

A.I. system integration

Controlled field testing



77 GHz Transition Task Discussion

- **Present demonstrator is at 24.125 GHz w/250 MHz bandwidth**
  - Commercial off-the shelf components and chipsets readily available
  - Low-cost test equipment allowed lab-ready capability demonstration
- **24 GHz band can provide certain product advantages**
  - Intrinsically longer range (~3x native due to propagation path loss)
  - AWEARE resolution improvements enables sensor fusion object detection, far more capable than traditional cruise control/lane change
- **Transition to 77 GHz promises true imaging capability**
  - Status of ST Micro 77 GHz chipsets?
  - AWEARE requires upconversion mixer per Tx chain
- **Upconversion & amplification module anticipated**
  - AWEARE requires one up conversion mixer per Tx chain
  - Single Tx can be split, upconverted w/off-chip IF, and amplified
  - AWEARE perceives larger array, splitters, switches, etc. as needed
  - Expect chip-and-wire/flip-chip module solution sufficient for milestone

Radar Chipset Opportunity

- **AWEARE natively minimizes ghosts (80-95%), encouraging rules-based DSP over scene-building A.I.**
  - Key discriminator: minimize calculation-intensive scene building
  - AWEARE IP can be embedded in the DSP
- **Business opportunity: first RF chipset products with embedded AWEARE waveforms**
  - Integrated splitter, driver, upconversion mixer for each channel
  - Either modify the RF front end of existing RF Tx chips or offer arrayable (e.g., 1x6) companion chip for higher Tx count & elevation
- **Sustainable competitive advantages**
  - Upgraded products for 24 GHz “advanced long range” market
  - Upgraded products for 77 GHz “imaging quality” market
  - Chipsets would be the first and only “out of the box ready” hardware supporting both RF front end and DSP back end