# TechConnect Innovation Challenge and Defense TechConnect Chal

SAND2020-3013C

## Submission Form

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| | **Contact Information** |
| **First name:** | **Eric** |
| **Last name:** | **Langlois** |
| **Organization:** | **5219** |
| **Job title:** | **Principal Member of Technical Staff** |
| **Address:** | **1515 Eubank SE** |
| **City:** | **Albuquerque** |
| **State:** | **NM** |
| **ZIP:** | **87123** |
| **Country:** | **USA** |
| **Phone:** | **(505) 844-0710** |
| **Cell phone:** | **(505) 377-8042** |
| **E-mail:** | **elanglo@sandia.gov** |
| | Note: In addition to the contact information, the following information may be made available to conference attendees if organization is invited to participate in program. **Please do not include any confidential or proprietary information in your submissions details.** |
| | **Organization Information** |
| **Company or Organization:** | **Sandia National Laboratories** |
| Website URL: | www.sandia.gov |
| **Organization size:** | [ ] 1 - 19<br>[ ] 20 - 99<br>[ ] 100 - 499<br>[ ] 500 - 2499<br>[X] 2500 or more |
| | |
| | **Technology Details** |
| | List as you want printed in the program. |
| **Technology/Solution Name:** | **MagSense** |
| **Brief Description of Technology in layman's terms:** | **MagSense is a passive, wireless, magnetically-transduced current sensor for frequency-selective current detection of asset health or failure.** |
| | 50 words max. |
| **Technology Development Status:** | [ ] Concept<br>[X] Prototype<br>[ ] Proven Manufacturability<br>[ ] Ready to Market<br>[ ] Commercial Product |
| **Organization Type:** | [X] Academic/Gov Lab<br>[ ] Early-stage Startup (Seed)<br>[ ] Mid-stage Startup (A or B)<br>[ ] Commercial Startup (C+)<br>[ ] Small to Medium Enterprise<br>[ ] Corporation |
| **Primary Application Area:** | [ ] Materials, Chemical<br>[ ] Electronics, Sensors, Communications<br>[ ] Cyber, AI, Data, Software<br>[ ] Space, Defense, Mobility<br>[X] Energy, Efficiency, Resilience<br>[ ] Water, Waste, Environmental<br>[ ] Medical Devices<br>[ ] Biotech, Pharma<br>[ ] Manufacturing, Instrumentation |
| **Secondary Application Areas:** (select all that apply) | [ ] Materials, Chemical<br>[ ] Electronics, Sensors, Communications<br>[ ] Cyber, AI, Data, Software |

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| | [ ] Space, Defense, Mobility<br>[ ] Energy, Efficiency, Resilience<br>[ ] Water, Waste, Environmental<br>[ ] Medical Devices<br>[ ] Biotech, Pharma<br>[ ] Manufacturing, Instrumentation<br>[X] Other |
| Other: | Tagging and tracking |
| | (if you selected Other above) |
| **Technology Keywords:** | **Magnetic, passive, wireless** |
| | Enter up to 3 technology keywords separated by commas. |
| **Market Keywords:** | **Power, sensing, faults** |
| | Enter up to 3 market keywords separated by commas. |
| **Detailed Technology Summary:** | **A magnetoelastic, wireless, autonomous, microfabricated passive smart sensor used to detect changes in current carrying conductors (CCC's) as low as micro-amps, characteristic of ground faults and arc faults through a magnetostrictive process inherent to these unique CoFe alloy films and can be manufactured with a unique resonant frequency acting as a finger print for every sensor. Interrogation of the sensor is performed wirelessly using a simple loop antenna which stimulates the sensor and then detects the frequency emitted by the sensor generated by mechanical ring down of the resonator. Changes in magnetic field applied to the sensor from the CCC cause detectable shifts in this resonant frequency.** |
| | What is transformational about this technology? How is it different from existing technologies? What is the potential impact on industry, markets and society? 200 words max. |
| **Value Proposition:** | This sensor can be individually packaged and installed into existing grid systems and/or directly integrated with complex grid systems (<$10/sensor, installed). These sensors will enhance grid reliability, security, and health with real time monitoring and fast failure localization. |
| | Why should a prospector or funder be interested in this technology? faster/lighter/stronger/cheaper/efficient, etc. 200 words max. |
| **List any Vetted Programs/Awards your tech has been acknowledged** | |
| | i.e, ,Prize, Challenge, Accelerator, Award Programs. 50 words max. |
| **Any Government Awards/Contracts** (list agency, amount, award-date): | **DOE, Laboratory Directed Research Development (LDRD) ($823k, 6/18) and Grid Monitoring Laboratory Consortium (GMLC)** |
| | i.e, SBIR, OTA, Grants, etc. 50 words max. |
| **Any External Funding to Date** (non-Gov.): | |
| | VC, corporate, angel, grants, etc. 50 words max. |
| **Market Strategy, Customers & Partners:** | |
| | 200 words max. |
| **Please document top 3 executive team members and experience:** | **Eric Langlois, Ph.D., concept developer and magnetic device specialist, Sigifredo Gonzalez, team leader, 25 yrs. of inverter development with industry experience, utility interconnection standards development. Jamin Pillars, Ph.D., electrochemist, magnetic alloy development** |
| | 200 words max. |
| **Would you like your tech to be considered for the Defense Innovation Challenges, Tampa FL Oct 22-24 2018?** | [X] Yes<br>[ ] No |