

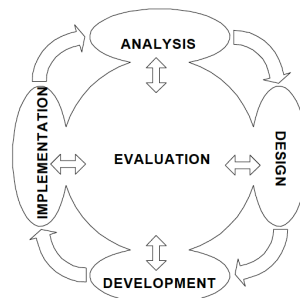
BEVAN INDUSTRIES

Research and Development

Bevan Industries performs research and development for government and commercial sponsors in three areas: Human Factors Psychology, Systems Concept Engineering and Biopsychology.

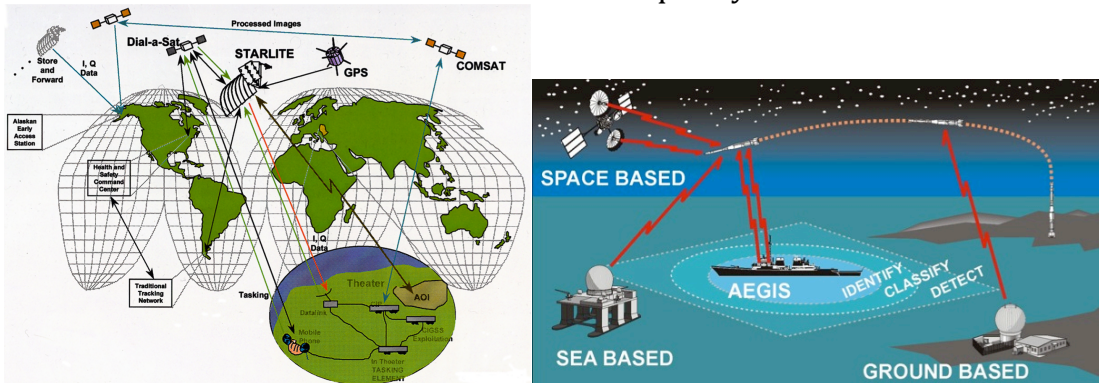
Human Factors Psychology. Our research in human factors psychology typically begins with task analysis and cognitive task analysis of the job function under study. Cognitive task analysis involves identification of mental processes involved in this job function. Both types of analysis contribute to man-machine interface, organizational, instructional design and development of information content rating scales. We have developed or contributed to two National Rating Scales and associated engineering equations for the Intelligence Community: the National Radar Interpretability Rating Scale and the National Ground Moving Target Rating Scale. Based on human factors psychology, BI uses a systems approach for development of instructional courseware (below right). Examples of task analyses and cognitive task analyses which Bevan Industries staff have performed include:

- Ship pilots Using Aids-to-Navigation (USCG below left)
- Sandwich Artist (Subway and Coca-Cola)
- Military and Civilian Command Center Message Sorter (Southern Railroad)
- Intelligence Analysts (CIA/DIA)
- Military Police
- Image Interpreters (CIA/USAF/US Army)
- Bomber Pilot Image Exploitation (USAF)
- Terrorists (USAF)
- BMD Threat Assessment and Weapon Allocation Analysts (MDA)
- Military Medics and Civilian Paramedics (US Army)
- MTI Analysts (USAF AFOSR)
- Food Artist (Coca-Cola)
- Signals Analysts (USN)



Most recently, from analysis of military medics and civilian paramedics, Bevan Industries staff developed a blast-trauma training device for the US Army. This device won awards in Modeling and Simulation in 2009 and 2011 and an SBIR Innovation Award in 2010.

Systems Concept Engineering. Bevan Industries staff has extensive experience in formulating initial systems concepts for military and civilian applications. BI staff led the development of systems concepts for DARPA including the Discoverer II Starlite concept of a constellation of low-cost reconnaissance satellites intended to support the theater commander with a direct downlink (see below left). BI staff also developed a concept for coordination and placement of Missile Defense sensor systems (below right). BI staff formulated and demonstrated a concept for passive identification of automobiles from their radio-frequency emissions for SOCOM.



Biopsychology. BI staff has expertise in biopsychology that we have applied in several areas. We demonstrated a telemedicine system for chemical warfare incidents that allows the few doctors with chemical warfare treatment experience to provide consults on patients while in remote locations. This system was demonstrated for the US Marine Corps and President Bush (shown below). BI developed the Integrated Theory of Stress for the US Army to understand the physiological basis for Post Traumatic Stress Disorder and stress resilience.



Bevan Industries staff is led by Dr. Thomas Bevan who received his Ph.D. in Psychology from Princeton University and his B.A. from Dartmouth College.

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