ROGER T. SCHAPPELL

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President and CEO, Schappell Automation Corporation, Inc (SAC)

Experience Base:

Forty-nine years of professional experience in the aerospace and commercial robotics and instrumentation business in positions ranging from project manager, VP/Director of the SAIC Center for Intelligent Systems (CIS), to my current positions as Vice President and support liaison for the Advanced Technology Group and CEO/President of Schappell Automation Corporation, Inc. (SAC) .

Professional Experience:

(8/86 to Present): Schappell Automation Corporation, Inc. (SAC)

President/CEO - This woman owned small business was founded 24 years ago to pursue specific high technology areas that were not being addressed by my primary employers, but on a non-conflict basis. SAC primary activities were in the robotics and automated weapons systems consulting arena to government agencies. SAC's current focus is to develop feasibility demonstrations with preproduction hardware and software and to penetrate the commercial marketplace while at the same time contributing to military needs in the areas of robotics, automated weapons systems, and the implementation of onboard intelligence, perception and behaviors.

SAC has been awarded two contracts, Army "Crowd Control" and Navy "Anti-Terrorism - Attribution and Retaliation". SAC is also awaiting award notification for the Army's Phase II requested proposals.

Key alliances have been formed with other industrial firms, universities, and small businesses such as Metal Storm, Inc., Mesa Inc, Colorado School of Mines and CMU.

(8/01 to 8/03): SAIC - Advanced Technology Group

Vice President - Advanced Automation Technology

New concepts development and new business acquisition in the Advanced Automation Technology arena with emphasis on interactive autonomous systems. Support to the SAIC Advanced Technology Group initiatives through independent ideas that evolved during the past 40 years while creating, assembling, and managing various industrial robotic organizations, and projects. Availability to help create and support new automation and weapons systems initiatives whether industrial or government. Created and orchestrated a joint long term project with Rafael Armament Development Authority, Ltd. in Israel related to unmanned systems.

(5/97 to 8/01): SAIC - Center for Intelligent Systems

Vice President and Director of Center for Intelligent Systems for SAIC in Littleton, Colorado. Charter: Establish a pre-eminent robotics development, and production center.

Center Programs Include:

- Tactical Mobile Robot (TMR) Systems Integrator for DARPA.
- XUV Demo III - Development of the Operator Control Unit software, the RSTA and Autonomous Mobility software for Army Research Laboratory.
- CHPS - Hybrid Electric Vehicle technology for DARPA.
- Demo II/III Planner for SRS for Omnitech/JPO.
- Rocky Flats DOE/KAISER HILL Glove Box Destruction via Robotics Support.
- Mobile Minefield for Army Picatinny Arsenal.
- Subot - Throwbot Robot for DOD Applications.
- Mobile Autonomous Robot Software (MARS) for DARPA.
- RCSS Mini-Flail via UGV/JPO
- ISIS Foliage Penetration Radar via DARPA
- Metal Storm Applications Analysis.

(1/94 - 05/97): CTA Incorporated

Vice President and Director of the Advanced Information Systems Division for CTA Inc., Englewood, Colorado. Charter: Establish a software oriented Information systems and a Robotic Organization.

Programs included are as follows:

- Project Focus: HOPE in Detroit - Set up a futuristic manufacturing facility and a Training facility for Machinists and CAD/CAM personnel.
- Develop tools under DARPA's MARITECH program for shipyard automation.
- Develop Process Tools - An object-oriented software tool for authoring, simulation scheduling and enactment.

(9/92 - 1/94): Sarcos Research Corporation

Executive Vice President for Sarcos Research (40%) Corp. and the Center for Engineering Design (60%), University of Utah, Salt Lake City, Utah. Charter: Grow the Robotics business base.

Programs included are as follows:

- Jurassic Park contract with Universal Studios for 16 dinosaurs.
- NASA Space Suit Tester
- TOPS - Teleoperated Anthropomorphic Robotic System.
- MEMS - MicroElectro Mechanical systems - Strain gauges, etc. for DARPA.
- GORILLA heavy lift (200 lb.) manipulator (master-slave) arm.

(3/65 - 9/92): Lockheed Martin Corporation

Director of Advanced Automation (1988 - 1992)

- Responsible for creating a self-sustaining robotics/artificial intelligence organization.
    - Won 92 government AI/Robotics contracts.
    - Received 18 Author and Inventor awards
    - Published 58 papers.
    - Managed 180 leading edge scientists/engineers.
    - Created three different organizations for various product areas.
    - Introduced Martin Marietta (Lockheed/Martin) to Robotics/AI in 1965

- Directed the activities in seven major technology areas.
    - Intelligent Vehicles - Surrogate Semi-autonomous Vehicles
      DARPA/OSD sponsored at $24.5M
    - Image Understanding - Automatic Radar Air to Ground
      Target Acquisition Program
      Air Force sponsored at $6.1M
        - 3DIFSAR Air Force sponsored at $1M
        - Classified Programs
    - Manufacturing Technology - Next Generation Controller
      Air Force sponsored at $26M
        - Enterprise Integration Program
          Subcontractor to Softech Inc. at $7M
        - Low End Controller
          DARPA sponsored at $2.3M
    - Robotics - Pursuing commercial applications in the areas of automated inspection, explosive ordinance handling, waste management, etc.
    - Smart Weapons Program for DARPA
    - Navy pointing mounts for Shipboard AAA guns.
    - Thirsty Sabre Weapons System
- Developed initiatives in eastern and western Europe with the following organizations:
  Donnier - Intelligent Vehicle Systems in Germany.
  Mannessmann - Gantry Robots & Components in Germany.
  Technopolis - Robotic Simulators in Italy.
  Saratoroblast - Multiple products in Russia.
  Nisson - Intelligent Vehicle Sensors and software.

Director of Advanced Technology Systems (1978 - 1988)

- Created and directed the following programs:
    - Autonomous Land Vehicle for DARPA ($21M) - World's first autonomous land vehicle.
    - Intelligent Task Automation for Air Force ($8M)
    - 32 NASA robotics contracts including the following programs:
        - FTS …….$600M from NASA GSFC. Responsible for setting the stage to win FTS, which was then established as an independent division.
        - TWS…….Teleoperated Workstation with NASA JSC.
        - IRSS……..Intelligent Robotic System Study with NASA MSFC.
        - ROBSIM……..Robotics Simulation Project for NASA LaRC.
        - JPL……..……Telerobotics Project.

Manager of the Robotics Section (1965 - 1978)

- Supported NOSC in the development of the Green Man anthropomorphic robotic system.
- Built three Mars Rover Vehicles for NASA.
- Was Principal Investigator for Space Shuttle FILE (Feature Identification and Location Experiment) which flew on the 2nd and 7th flight of Space Shuttle.
- Designed a hot-box manipulator for Oak Ridge National Laboratories.
- Developed the Planetary Landing Site Selection System for the Mars Lander.
- Supported Dr. Carl Sagan's Viking/Mars Lander Science Steering Group.
- Supported Dr. Marvin Minsky's NASA robotics initiatives in the early 1970's.
- Assembled four robotics laboratories at Martin Marietta in Denver.
- Worked with Dr. McCollough and Lou Sutno from the MIT Instrumentation Laboratory on the development of stereovision.

- Developed Fault Isolation Expert System (FIES) for NASA MSFC.
- Designed Upper Stage closed loop guidance and insertion control system for the Scout Launch Vehicle.
- Developed Viking/Mars terminal decent and landing system simulation program.
- Co-developed Titan IV Trajectory Error Analysis program.

Program Manager for Martin Marietta in Orlando, FL (1965)

- Supported the development of optical and millimeter wave area correlator systems.
- Developed Pershing 1a Guidance System.
- G&C Research on Short Range Attack Missile.

(1961 - 1964): Bendix Corporation

Project Engineer for the Eclipse-Pioneer Division of the Bendix Corporation in Teterboro, N.J.

- Developed a two-gyro platform for the F-5 and T-38 aircraft, still flying 39 years later.
- Developed a vertical velocity indicator for helicopters.
- Developed a remotely controlled German Tank while working with Teldix in Heidelberg, Germany (51% owned by Bendix)
- Developed a navigation system for the Sea Vixen aircraft in England.
- Developed autopilots for Sud Aviation in Toulouse, France.
- Responsible for "commercialization" of instrumentation technology.
- Designed voltage amplifiers, oscillators, and inverters.
- Developed Azimuth/Elevation pointing and stabilization mounts for various weapons system.

I have always maintained extensive university interaction by providing on the average of $2.1M per year to the respective robotics and machine intelligence researchers.

Education:

- Widener University, Chester, PA BSEE 1961
- University of Florida (GENESIS) Math Course work 1965
- University of Colorado in Denver - Control Systems (30 hrs.) 1965-1975 towards Master Degree.
- Many specialized courses including Experiment Interaction via the NASA Payload Operations Command Center, Microchip design via Motorola in Scottsdale, etc.

Clearance: ***Top Secret***

Awards:

- **2 Jefferson Cups for Author Awards**
- **6 Invention Awards**
- **16 Awards for Published Papers**
- **The Air Force Talon Award**
- **Nominated for membership to the NAS**

Publications: 74 papers, books & wide distribution government technology reports.