HISTORY OF SATELLITE COMMUNICATIONS

SATELLITE COMMUNICATIONS WERE FIRST DEMONSTRATED AS A POSSIBILITY IN 1946, WHEN ARMY SIGNAL CORPS SCIENTISTS AT FORT MONMOUTH BOUNCED SIGNALS OFF THE MOON IN A PROJECT CALLED DIANA.

IN 1958, PROJECT SCORE BROADCASTED A MESSAGE FROM SPACE VIA A ROCKET IN A LOW-ALTITUDE ORBIT.

IN 1960 COURIER, ANOTHER ARMY DEVELOPED SATELLITE SERVED SUCCESSFULLY AS AN EXPERIMENTAL SPACE MESSENGER.

IN OCTOBER 1960 THE ADVENT AGENCY WAS FORMED AT FORT MONMOUTH, LATER IN 1962, IT WAS RENAMED THE U.S. ARMY SATELLITE COMMUNICATIONS AGENCY.

ON JULY 26, 1963 NASA LAUNCHED THE WORLD'S FIRST SYNCHRONOUS COMMUNICATIONS SATELLITE CALLED SYNCOM INTO ORBIT. THE UNITED STATES ARMY SATELLITE COMMUNICATIONS AGENCY PROVIDED ALL THE GROUND AND SHIPBOARD TERMINALS FOR THIS HISTORICAL AND SUCCESSFUL EXPERIMENT. THE FIRST TERMINALS WERE LOCATED AT FORT DIX, NEW JERSEY; CAMP ROBERTS, CALIFORNIA; LAKEHURST, NEW JERSEY; AND A

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U.S. NAVAL SHIP KINGSPORT. WORKING IN CLOSE COORDINATION WITH NASA, SATCOMA PROCEEDED TO CONDUCT HUNDREDS OF TESTS OVER THE SATELLITE USING VOICE, FAC-SIMILE, MULTICHANNEL TELETYPE AND VARIOUS OTHER SIGNALS. IT WAS DURING THIS TIME THAT SATCOMA SUCCESSFULLY DEMONSTRATED TO THE U.S. CONGRESS, THE STATE DEPARTMENT, ALL ELEMENTS OF DOD AND THE GENERAL PUBLIC, THE FEASIBILITY OF SATELLITE COMMUNICATIONS. SOME OF THE MOST HISTORIC DEMONSTRATIONS WERE PRESIDENT JOHN F. KENNEDY TALKING TO THE PRIME MINISTER OF NIGERIA AS THE FIRST PRESIDENTIAL TELEPHONE CALL (23 AUGUST 1963), UNITED NATIONS - NEW YORK TO GENEVA (31 OCTOBER 1963), AND THE OPENING OF THE OLYMPIC GAMES IN JAPAN ON 7 OCTOBER 1964 WHICH WAS TRANSMITTED FROM JAPAN TO THE UNITED STATES AND RELAYED TERRESTRIALLY AND BY CABLE TO 21 COUNTRIES.

IN DECEMBER 1963 SATCOMA UNVEILED THE FIRST HIGHLY TRANSPORTABLE TERMINAL CALLED THE MARK IV. IT WAS TESTED BY THE STRIKE COMMAND, ARMY WAR COLLEGE, FORT HUACHUCA AND LATER DEPLOYED TO SAIGON, REPUBLIC OF VIET NAM.

HISTORY OF SATELLITE COMMUNICATIONS

IN 1964 THE AN/MSC-44 WAS DEPLOYED TO HAWAII, PHILIPPINES AND ETHIOPIA, OPERATED BY THE ARMY TO ADD TO THE SMALL BUT GROWING NETWORK OF TERMINALS CONDUCTING TESTS AND PASSING TRAFFIC. ALL TERMINALS REVERTED TO DCA CONTROL AND MILDEP O&M.

IN THE TWO YEARS THAT FOLLOWED, THE AN/MSC-46 WAS DEPLOYED TO TWELVE (12) LOCATIONS WORLD-WIDE TO INCLUDE TWO (2) IN VIET NAM IN NOVEMBER 1966. THE MSC-46 AS ORIGINALLY DEPLOYED BOASTED FIVE (5) VOICE CHANNELS, BUT COULD TRANSMIT A LIMITED WIDE-BAND CAPABILITY.

IN 1965 SATCOMA BEGAN DEPLOYING THE LIGHT TERMINAL IN AN S-280 SHELTER, WHICH WAS THE AN/TSC-54. THE AN/TSC-54 MADE ITS APPEARANCE IN FOURTEEN (14) LOCATIONS TO INCLUDE THAILAND AND KOREA. THE TSC-54 WAS THE FIRST SATELLITE TERMINAL IN KOREA. IT WAS ALSO THE LAST VOICE OUT OF SAIGON AT THE END OF THE WAR.

ON JUNE 16, 1966 THE FIRST SATELLITES WERE LAUNCHED FOR THE DEFENSE SATELLITE COMMUNICATIONS PROGRAM (DSCS) AND DCA CONFIGURED ALL NETWORKS WORLD-WIDE TO WORK WITH THE NEW SATELLITES.

HISTORY OF SATELLITE COMMUNICATIONS

DURING THE EARLY 1970'S, SATCOMA UPGRADED THE MSC-46 TO 72 VOICE CHANNELS AS WELL AS ADDING A 12 VOICE CHANNEL CAPABILITY TO THE AN/TSC-54.

OCTOBER 1975 BEGAN A NEW ERA WITH THE START OF THE DEPLOYMENT OF THE FIRST HEAVY TERMINAL WITH ITS 60' ANTENNA AT KEY LOCATIONS OF HAWAII, SUNNYVALE, FORT MEADE, FORT DETRICK, LANDSTUHL, GUAM, NORTHWEST, CROUGHTON, CAMP ROBERTS, MENWITH HILL, ELMENDORF, KWAJALEIN, NEW BOSTON AND OFFUTT AIR FORCE BASE.

IN APRIL 1977 SATCOMA SHIPPED ITS FIRST DIGITAL COMMUNICATION SATELLITE SUB-SYSTEM (DCSS) TO SUNNYVALE, AFTER MANY YEARS OF RESEARCH WHICH WAS CONDUCTED IN PARALLEL TO DEPLOYMENTS OF ANALOG SYSTEMS. IT WAS THEN THAT NEW TERMINALS REPLACED THE OLD AND DIGITAL COMMUNICATIONS BEGAN TO PHASE IN. SATCOMA COUNTER-MEASURES EQUIPMENT AND WIDE-BAND HIGH-RATE TRUNKING NOW BECAME A REALITY WITH MULTIPLE UP AND DOWN LINKS AT EACH LOCATION.

THE AN/GSC-39 TERMINAL WITH ITS 39' ANTENNA BEGAN BEING DEPLOYED IN JANUARY 1978, ALL ACCOMPANIED BY A NEW DCSS. THIS CONTINUED INTO 1985.

HISTORY OF SATELLITE COMMUNICATIONS

IN MAY 1982 THE AN/TSC-86 JCS CONTINGENCY TERMINALS WERE DEPLOYED COMPLETE WITH AN ALL DIGITAL COMMUNICATION SUBSYSTEMS INCORPORATED.

IN MARCH 1985 THE LAST ANALOG CIRCUITS WERE REPLACED WITH DIGITAL MAKING THE DEFENSE SATELLITE COMMUNICATION SYSTEM ALL DIGITAL.

A NEW STATE-OF-THE-ART (SAMT) TERMINAL WITH 40' ANTENNA CALLED THE AN/GSC-52 WAS DEVELOPED, AND SATCOMA BEGAN DEPLOYMENT OF 39 EACH IN DECEMBER 1985 AND CONTINUED UNTIL 1992.

A FIRST GENERATION OF PRODUCTION TACTICAL SATELLITE (TACSAT) TERMINALS WERE DEVELOPED AND DEPLOYED IN 1979. IN 1986 SATCOMA BEGAN THE DEPLOYMENT OF SEVERAL HUNDRED AN/TSC-85A/93A/94A/100A FULL SCALE PRODUCTION TERMINALS TO WORLD-WIDE COMMANDS OF ARMY, AIR FORCE AND MARINE CORPS.

IN 1988 SATCOMA WAS REORGANIZED INTO TWO GROUPS - PM-SATCOM AND WHAT IS NOW KNOWN AS CECOM SPACE SYSTEMS DIRECTORATE (CSSD). THE FIRST PRIORITY OF CSSD IS TO SUPPORT PM-SATCOM. BOTH ARE STILL LOCATED AT FORT MONMOUTH, NEW JERSEY.

HISTORY OF SATELLITE COMMUNICATIONS

DURING 1989 AND 1990 THE NEW OM-73, (20MB/SEC DATA MODEM) WAS DEPLOYED AT KEY LOCATIONS AS SOME OF THE LINKS REACHED OR EXCEEDED 10MB/SEC.

IN 1990 A NEW BUILDING WAS COMPLETED FOR THE SPACE SYSTEMS DIRECTORATE RESEARCH FACILITY AT FORT MONMOUTH. ESTABLISHED EARLY IN THE PROGRAM, IT IS THE ONLY FACILITY OF THIS TYPE WHICH SUPPORTS RESEARCH, DEVELOPMENT, DEMONSTRATION, TEST AND EVALUATION OF SATELLITE RELATED HARDWARE. IT HAS BOTH SIMULATORS AND A VARIETY OF ACTIVE TERMINALS AND BASEBAND EQUIPMENT.

THE FALL OF 1991 PM-SATCOM AND CECOM SPACE SYSTEMS DIRECTORATE WERE INVOLVED WITH THE DEPLOYMENT OF MORE THAN 100 TACTICAL TERMINALS TO THE PERSIAN GULF DURING OPERATION DESERT SHIELD. DESERT SHIELD TURNED INTO DESERT STORM IN JANUARY 1991 WITH A FULL SCALE WAR. OTHER EFFORTS INCLUDED DEPLOYMENT OF AN AN/GSC-52 WITH AN/MSC-74 DIGITAL COMMUNICATION SATELLITE SUBSYSTEM INTO THE AOR TO SUPPORT HIGH DENSITY TRAFFIC TO CONUS AND EUROPE.

HISTORY OF SATELLITE COMMUNICATIONS

IN SEPTEMBER 1991 THE LAST OF THREE (3) SCT-20 CUSTOM COMMERCIAL TERMINALS WITH BASEBAND WAS DEPLOYED OVERSEAS. THE SCT-20 HAS A 20' ANTENNA AND THE THREE SYSTEMS SERVE SPECIAL MISSIONS AT REMOTE LOCATIONS.

IN 1992 THE LAST DSCSOC AT FORT BUCKNER WAS NEARING COMPLETION. THE DSCS OPERATION CONTROL SYSTEM (DOCS) CONSISTS OF OPERATIONS CONTROL CENTER (DSCSOC) AT FORT MEADE, FORT DETRICK, LANDSTUHL, CAMP ROBERTS, ONIZUKA AND FORT BUCKNER. (CLARK AB WAS LOST DUE TO VOLCANIC DISASTER IN 1990).

PM-SATCOM AND CECOM SPACE SYSTEMS DIRECTORATE IS CONTINUING TO DEVELOP AND DEPLOY SATELLITE COMMUNICATION EQUIPMENT FOR GOVERNMENT USE. THE GOAL IS ALWAYS THE SAME - RELIABILITY, QUALITY, MAINTAINABILITY AND JAMMING PROTECTION.

CONSIDERING PROJECT DIANA AS THE BEGINNING, THE U.S. ARMY HAS BEEN IN SPACE 46 YEARS!