

System	Date	Description
UNIVAC File Computer used to process flight information	1956	(1956 award?; 1959 install?) In 1956, the FAA taps Sperry Univac to find out how to use computers for air traffic control. The UNIVAC File Computer used to process flight information at five ATC centers by 1959.
ARTS I - Atlanta	1963-1966	ARTS I - Atlanta. Two UNIVAC 1218 computers bring automated air traffic control to Atlanta, Georgia. The date, 1964. The computer backed up system called ARTS, uses advanced electronics to tag radar blips with symbols, letters and numbers - alphanumeric. (Per Swiss ATC proposal and a 1963 Journal of ATC article, ARTS meant Advanced Radar Traffic Control System.) INCO at Atlanta tower to start in March 1964 with full operation scheduled for July 1964. Radars were ASR-4 and ATCRBI-3. 1218 computers. (JWF) System Test in Feb 1965 (8000 instr.) A lot of evaluation time. The system was declared operational after field trials in 1966. In 1963 the FAA awarded a contract to the Univac Division of Sperry Rand .. for ARTS I in Atlanta.
Stored Program Alpha-Numeric (SPAN) beacon system	1964 Apr - Sept 1966 (after SPAN)	Stored Program Alpha-Numeric (SPAN) beacon system - 1964. Per 1963 Journal of ATC article, ARTS is primarily a terminal system. A similar system for beacon readout only will be installed in the high Altitude Positive Control Facility at Indianapolis Center. This system is called SPAN. Per Sept 1964 journal of ATC article, "early next Spring controllers will get a preview of the future method for displaying aircraft identification and altitude on their displays." New York Center Beacon Alpha Numeric (NYCBAN). It consisted of the Indianapolis SPAN system that was relocated to Lake Ronkonkoma, NY which was the location of the Center. The software was modified to adapt it to the New York Center environment. As far as I can recall, it never went any further as a system.
ARTS IA - New York Common IFR Room (CIFRR)	1966 -1968	ARTS IA - New York Common IFR Room (CIFRR). Put into operation early in 1967. Dedication ceremony July 11, 1968. Operational commissioning in June 1969. In 1966, Univac was awarded the contract for the ARTS IA for the CIFRR. Installation began in late 1966 and completed early in 1968. (JWF) CIFRR contract Aug 15, 1966; contract end Feb 9, 1968. The CIFRR system remained in operation at hanger 11 near JFK airport until it was decommissioned in Jan 1981, when the New York TRACON ARTS IIIA system came on line.
ARTS III	February 20, 1969 1970/1971 2/71 - 6/73 9/29/71 - 8/13/75 1974 1975 Fall 1984	Basic ARTS III Contract award ARTS Enhancement Phase I (Radar tracking, bcn trkg impr, Failsafe/failsoft, all-digital display (DEDS vector mod.) , Multi-sensor trkg, M&S, Multi-processing, Continuous Data Recording, Flight Data Distribution) During 1970 and 1971 the FAA awarded contracts to develop six of these expansion functions... Basic ARTS III site deployment (64 systems) Basic ARTS III sites go operational (DFW was latest; probably because DFW airport was just opening up. Love field used to be Dallas's main airport.) Atlanta ARTS III contract award; Atlanta ARTS III deployed (2/76 IOC; 9/76 operational) ARTS Enhancement Phase II Award (task 7, Task 34 - Tampa; other tasks) ARTS Enhancement Phase III - Architecture studies for an Expanded New York TRACON system
Japanese ARTS III	1974 1974 1980 1981 1984 1985	Japanese ARTS III (July 1977: recently completed installs at Tokyo Haneda and Osaka) (Sold off in Feb. 1975. Operational ?) (JWF: JARTS initial design Feb 1973) Japanese ARTS III systems installed in Tokyo and Osaka Japanese ARTS III system installed in Narita Japanese ARTS III system installed in Fukuoka Japanese ARTS III system installed in Nagoya Japanese ARTS III system installed in Sendai Training Center
EARTS-1 (Murphy Dome)	1/74-12/74	EARTS-1 (Murphy Dome)

MSAW	Dec 1974 July-Nov 1976	ARTS III MSAW contract (\$2.9M) (JWF: MSAW develop Zdot algorithm, analyze SAW logic Aug 1974) MSAW software operational at sites (a0.12.1; 11/76)
Tampa - Sarasota ARTS IIIA	1975 Sep-76 May 1979 September 7, 1982	ARTS Enhancement Phase II Award (task 7, Task 34 - Tampa; other tasks) Start work in Tampa Tracon Tampa operational date; First cut over to operational status (IOC); Tampa went operational on Memorial Day weekend in 1979, first up on Saturday; had some problems; they were fixed and the system went back up operationally on Monday. Tampa-Sarasota system commissioned
Conflict Alert	July 1975 Feb 1976 December 7, 1977 July 15, 1978 12/77 - 9/78	ARTS III Conflict Alert contract John Flood records show Conflict Alert development started on ARTS III Enhancement Phase II task number 4 (there were several CA projects prior to this!) ARTS III Conflict Alert operational at IAH (A0.15?) (CA dev. as part of Phase II task) ARTS III Conflict Alert operational at MIA (A0.16?) (CA dev. as part of Phase II task) Conflict Alert software operational at ARTS III sites
ARTS IIIA, EARTS and NY TRACON	Aug 1976 Oct - Dec 1979 10/79 - 1981?? 3/79 - 10/79 1979 Jan 9, 1981 1985 Sept 1989 June 4, 2011	Award of ARTS IIIA, CDR, EARTS and NY TRACON ARTS IIIA contract (\$36.675M) New York TRACON ARTS IIIA SOST ARTS IIIA deployed (not operational until years later) EARTS deployed New York TRACON ARTS IIIA deployed NYT ARTSIII/site commissioning. (At 2:10 am on 9 January 1981, a Lockheed Electra becomes the first aircraft to be handled by the new New York TRACON. Now handling up to 1200 aircraft from the three major New York area airports, the TRACON is the most modern, automated facility in the United States. EARTS Mosaic (DTFA01-85-C-00007) (also CA/MSAW) (1984? -1991) ARTS IIIA ISP Contract award (more ARTS HW, FDADs, SSMs, VTC, MCI SW) (DTFA01-89-C00058) (\$44.95M) On June 4, 2011, the last of our IOP-based ARTS IIIA ATC automation systems was taken out of operational use, when the new tower and system came on-line in Dayton, Ohio.
Korean ARTS III	1980 Dec 1980	Korean ARTS III Bruce Clark, etal come home after "selling off" Korean ARTS
MATCALs	1982 1983 Sept 1986	MATCALs award. 17 systems. Control and Communications Subsystems (CCS) first MATCALs CCS delivery MATCALs Air Traffic Control Subsystems (the ASR radar subsystem) (3rd & last major subsystem to be produced by Sperry and Selenia) award. AN/TPS-73 radar for MATCALs (17 systems). 1st production delivery June 1991. ATCS shelter - Great Neck; radar - Selenia; Unisys - Auto Tracker. [Other subsystems: All-Weather Landing Subsystem (PAR) (AN/TPN-22) - ITT; AN/TPS-131 Control and Communication Subsystems (CCS) - Unisys]
ARTS IIIE	April-Sept 1985 March 14, 1986 July 1988 April 1989 May 18, 1991 July 3, 1991 July 28, 1996 August 24, 1996 October 22, 1996	New York ARTS IIIE proposal generation (RFP in early June 19?, 1985, proposal submitted Sept 9, 1985) Awarded New York TRACON ARTS IIIE (\$45.6M) in a competition over IBM. (DTFA01-86-C-00006) New York TRACON ARTS IIIE Interim Capacity Update (SSM, FDADs, SW mods) went operational. New York TRACON ARTS IIIE Stage 1 (IPS, LAN, DPS) went operational (ORD) New York TRACON ARTS IIIE Stage 2 (TP, CP, SMC, LAN, DPS) went operational (IOC) New York TRACON ARTS IIIE Stage 2 (TP, CP, SMC, LAN, DPS) declared ORD DFW ORD on A6.04 ARTS IIIE NYT A6.04 ARTS IIIE ORD Chicago ORD on A6.04 ARTS IIIE

Taiwan ATC	1990 July 1991	Taiwan Micro-ARTS IBM/Unisys Taiwan contract award (Micro-EARTS for terminal sites) (Operational in 1996)
German STCA	Dec 1992 Late 1993 sometime April 1998 March 1, 1999 January 1, 2004	German STCA (DERD version) contract award (1991?) installed in about 11? RANSUs and LANSUs German STCA (DERD version) installed at Berlin (first site) German STCA (P1 version) contract award; replacement of the DERD-X(L) systems in DFS RANSUs and LANSUs by P1, & consolidating into 3-4 larger units. Start -April 1, 1998; Finish -March 26, 1999; +1 year maintenance. Deliver 2 systems to Langen, 1 system to Bremen, use 4th system in Eagan for reference and development. Port existing DERD STCA from AIX to DEC UNIX 4.0D. STCA-P1 systems accepted Contract award for STCA-3; the VAFORIT version of STCA; LM successfully completed our portion but the German VAFORIT project had problems. (From Al Womelsdorf on 11/6/2009: The entire VAFORIT project is many years behind, and it is hoped it will go operational in 2010, but many believe it will never function operationally and will be overcome by events (other European initiatives). Dusseldorf, Munich, Bremen are all still running the old P1-ATCAS system (which includes our STCA as well).)
Denver Final Monitor Aid	1/93 - 9/93 September 21, 1993	Denver Final Monitor Aid System Development Denver Final Monitor Aid System test Completion
Common ARTS	September 4, 1994 August 26, 1997 February 12, 1998 2/12/1998 - 5/22/2000 July 24, 1998 April 1, 1999 Common ARTS Color Display May 12, 1999 August 1, 1999 August 17, 1999 April 1, 2000 June 16, 2000 August 12, 2000 June 19, 2001 October 22, 2002 October 30, 2003 April 1, 2004 2004 - 2006 Aug-06 October-07 3/1/2008 11/19/2009	Common ARTS contract award (letter award/authorization) (mod to A6.04 ARTS IIIIE contract) "End" of Common ARTS development contract (handover to FAA); FCA/PCA (main development portion) ARTS IIE (Common ARTS) sites start going operational (First four: Atlantic City 2/12/98 IOC; Pensacola 3/9/98 IOC; Roswell 4/30/98 ORD; Reading 4/28/98 IOC) ARTS IIE site deployment/operation Denver Common ARTS IOC Common ARTS Mosaic start Initial ACD development contract Large TRACON contract: award for 3E at Potomac Consolidated Tracon Common ARTS Radar Gateway (RGW) award Large TRACON contract: award for 3Es at NCT, MSP and STL Initial RACD development contract (ATL, NCT) ACD IOC at NYT Common ARTS ADS-B development contract award Common ARTS RGW Mosaic task award Common ARTS Mosaic at Keysite RACD Phase III award Common ARTS ADS-B evaluations in Louisville Contract award for TAMR (TAMR 2); Raytheon is prime. Terminal Automation Modernization / Replacement (TAMR). The intent of this Project is to modernize automation systems at 4 ARTS IIIIE FDAD TRACONS and their associated ATC Towers to mitigate risk to service; Chicago, Denver, St. Louis, Minneapolis/St. Paul. TAMR 1: Raytheon STARS (Standard Terminal Automation Replacement System); Won competition in 1996 for 171 sites for \$900M; Actual performance: 50 sites for \$1.8B TAMR 2: Upgrade to four IIIIE sites (ORD, Den, MSP, STL) and five ARTS IIE sites; LM subcontracted to Raytheon for the IIIIE sites and kept them as CARTS site; Raytheon was tasked to transition the five IIE's to STARS, not sure how many were done. Award of add ADS-B into CARTS contract. (did ADS-B into baseline starting in 2001 but was never really used (FAA hadn't deployed ADS-B "sensors" yet). This contract shortly followed award of ADS-B SBS contract to ITT. TAMR hardware installation completed at MSP CARTS ADS-B begins operations (IOC) at Louisville. Significant is that a new System Track Display Mode (STDM) allows for 3 nm separation in a multisensor environment.

Micro-EARTS	1/95-12/99	Micro-EARTS (RBDER/Micro-EARTS deployment) (7/11/97 data: Contract: DTFA01-95-C-00009; Contract type: Firm Fixed Price / LOE; Performance Period: Jan 1995 to Dec 1999; Contract Value: \$14,113K; Current Funding: \$10,765K) (The present Micro-EARTS contract, DTFA01-95-C-00009, was awarded to Lockheed Martin in December 1994. The contract included three base years of technical support along with two option years. The FAA, in June 1999, extended the Micro-EARTS contract through the year 2002.) (February 2005: This is the final Program Status Report for the Micro-EARTS contract DTFA01-95-C-00009. Any additional information on contract closeout of this contract will be provided in CDRL A002, Contract Status Report, for the new Micro-EARTS contract (DTFAWA-05-C-00033). The new Micro-EARTS support contract was signed on February 28, 2005.) (From Birkholz on 7/25/05: program E21/E27, POP: 12/28/94 - 12/31/1999, CV/FV: \$15,216,767; program E57/E58, POP: 1/28/00 - 2/28/05, CV: \$32,876,044, FV: \$32,100,899 (est total ~\$47M))
	March 1996	Micro-EARTS operational at WSMR; keysite M4.07
	August 1996?	Micro-EARTS keysite at Anchorage; M4.08
	January 1, 2001	Micro-EARTS Capstone start of operational use of ADS-B in Bethel
	April 30, 2010	IOC of the new Micro-EARTS ADS-B capability in Juneau on 4/28/2010.
China COAC ACC/TACC	April 1995 April 11, 1997 January 29, 1998 March 11, 1999	China COAC ACC/TACC COAC site installs complete Contract award: China TCCs (ASTEC) (Hong Qiao and Pu Dong) Contract award: China TCCs (ASTEC) (Nanchang and Hangzhou)
EBUS	November 1, 2002 April 24, 2005 March 31, 2006	EBUS contract award. EBUS (en route backup surveillance system, that replaced DARC) (based upon MEARTS) EBUS IOC at first site (Denver ARTCC) On March 31, 2006 the ARTCC facilities in New York, Miami and Los Angeles achieved full operational status for the EBUS system. This completed the deployment of EBUS to all 20 ARTCCs in the continental United States.
ASPARCS (planned replacement for MATCALs)	June 29, 2000 October 19, 2001	ASPARCS award Completed ASPARCS testing of Micro-EARTS. So our Eagan portion of ASPARCS went pretty well, but LM Syracuse later failed in the development of the radars, so the system was never fielded.
ERAM	June 28th, 2002 October 10th, 2007 2009	En Route Automation Modernization (ERAM) contract awarded to LM. Eagan portions are safety functions (MSAW/CA) and EDMS (Controller display software). Unfortunately Raytheon is providing a version of the STARS tracker. ERAM Government Acceptance: Lockheed Martin today announced it attained Government Acceptance of the system it has developed and tested for the Federal Aviation Administration's En Route Automation Modernization (ERAM) program. System testing recently conducted by Lockheed Martin was completed on schedule, and the program now moves into operational testing by the FAA as part of the program's deployment phase. ERAM begins IOC. Salt Lake ran for 24 hours on 10/31/09; a shorter run last summer; expect to switch over 24/7 yet this year.