

1.1 CDC 6000/70/170 Family Tree

1.1.1 Introduction

Following is a partial history of CDC operating systems. Also included is the nomenclature used for each of the KRONOS-NOS and SCOPE-NOS/BE releases.

Figure 1 is a geneology chart of CDC's operating systems for 6000, CYBER 70L and CYBER 170 computers. Like all good American geneologies, it includes a few horse thieves. We won't say who they are.

There were actually more operating systems than are named on the chart. Each dot represents a version. However, there were never more operating systems than manufactured CPU's. Well, there were, actually. But only at first. We had three underway before the first 6600 ran. There were three FORTRAN compilers too. So for awhile, software was ahead.

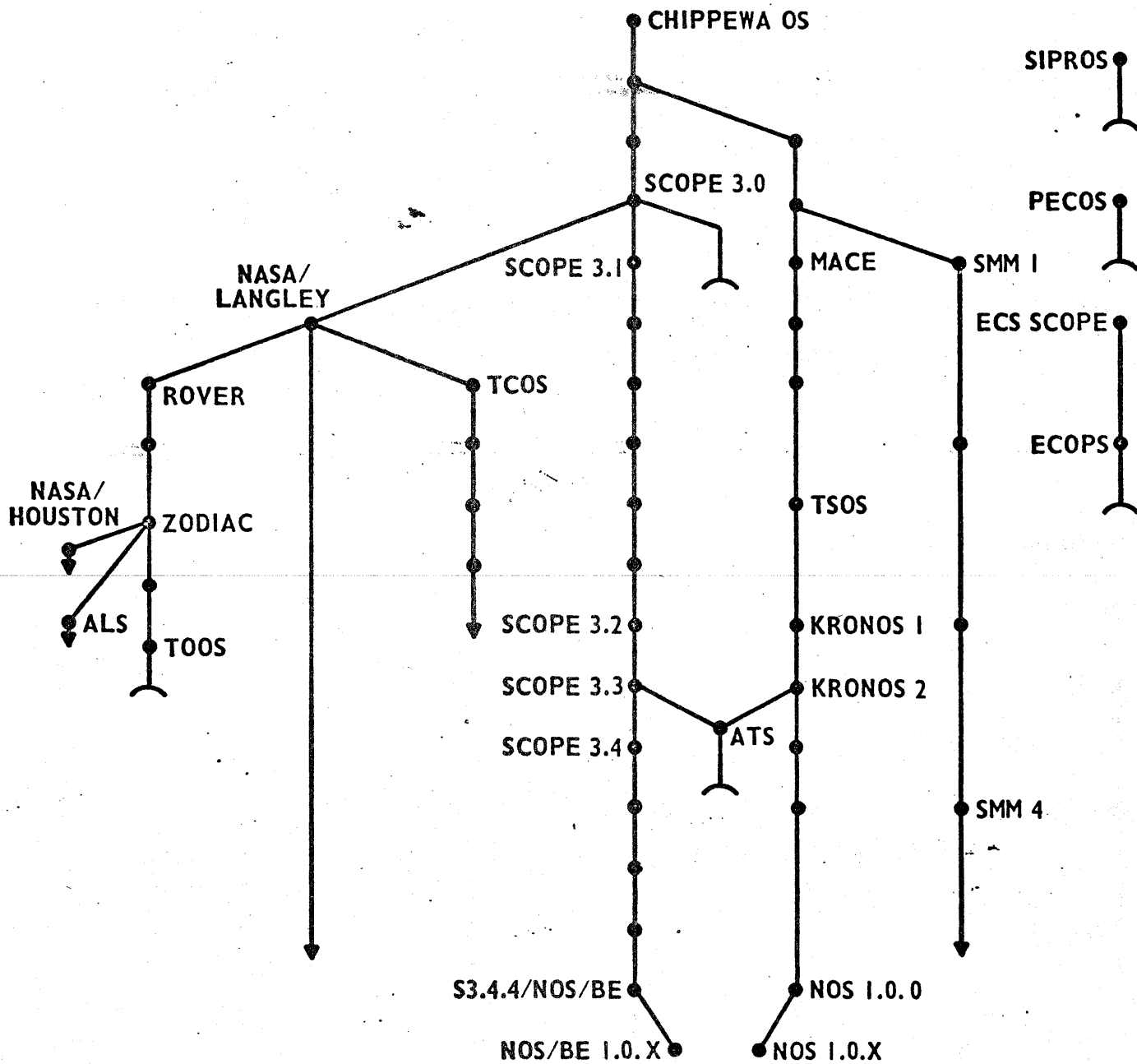
You will notice that all these systems are descended from the CHIPPEWA operating system except those on the right. Not shown on the chart are ECS SCOPE and ECOPS which are also CHIPPEWA descendents. The lesson to be learned from the failure of the fresh starts, SIPROS and PECOS, is one in economics. It costs more to develop and market a system than can normally be afforded.

Looking at the structure of the chart, we see the standard system, the main branch of the family as it were, SCOPE, running down the middle. To its right is the more recently begotten KRONOS. On its right is SMM, which is used by the customer engineers to maintain the hardware.

To the left we find Great Aunt NASA/LANGLEY with her brood of special systems. This has been a prolific branch of the family, although not always a wealthy one. It is now dying out as the standard systems pick up the features and customers from the specials. The TCOS users have gone to SCOPE 3.3. NASA/HOUSTON and NASA/LANGLEY are going to KRONOS 2.1. ALS is going to SCOPE 3.4.

COMMON O/S MODULES OPERATING SYSTEM GENEALOGY

NOV 75
PKH



1.1.2 History of SCOPE {Simultaneous Control Of Program Execution}

SCOPE is the name which was given to the productized version of the Chippewa operating system. CDC's original plan was to make SIPROS the standard system, but when it was delayed and a sizeable customer base developed using Chippewa, the plan was changed.

SCOPE has been under continuous development in Sunnyvale since 1965. Several changes in emphasis occurred during this development history, usually associated with significant milestones. In 1967, SCOPE 3.0 was released. This release represented a significant extension of the features that were previously available. By 1970, when SCOPE 3.3 was released, performance enhancements were needed. The I/O system was restructured at that time.

A major step was taken in 1972, with the release of SCOPE 3.4. This version added significant new features, including the record manager which is the basis of our data management products. It also marked the beginning of the era in which the ideas about compatibility and commonality were consciously promulgated, proved and improved. Future operating systems developed from this base will be called NOS/BE.

1.1.3 History of KRONOS {Greek God of Time}

KRONOS, like SCOPE, has its origin in the Chippewa operating system. Unlike SCOPE, it did not immediately become a widely used product. It spent several years (under the code name "MACE") as a high-performance benchmark system (TSOS). Incidentally TSOS was developed for Unit Computing Systems, one of several large, successful commercial time sharing companies that use KRONOS based systems.

The name KRONOS was first used in 1970. KRONOS 1 was the product CYBERNET Services used to expand their existing remote batch capability into a time sharing service. The major emphasis in this productized version of a high performance operating system was reliability.

KRONOS 2.0, released in 1971, was primarily an extension of the features of KRONOS 1. This emphasis was continued in KRONOS 2.1, released in 1973. The 1973 version incorporated the same product set and data management system as SCOPE, signalling the first real breakthrough in our move toward commonality. It also included the TRANEX subsystem for transaction processing.

Future operating systems developed from this base will be called NOS. The current emphasis is on providing additional features while extending the commonality between NOS and NOS/BE.

It is interesting to note the oscillation, in these development histories, between emphasis on capabilities, performance, and reliability. All three are needed in ever increasing degrees to keep us abreast on our advancing competition.

SYSTEM VERSION	LEV.	RELEASE DATE	SYSTEM VERSION	LEV.	PROD. SET LEVELS	RELEASE DATE	SYSTEM VERSION	PROJECT LEVELS	RELEASE DATE
KRONOS 2.0	0	71/02/15							
	1	71/04/09							
	2	71/06/14							
	3	71/07/29							
	4	71/09/21							
	5	71/10/29							
	6	71/12/17							
	7	72/03/01							
	8	72/05/24							
	9	72/07/25							
	10	72/10/26							
	11	73/01/16							
	12	73/06/14	KRONOS 2.1	0		73/07/02			
	13	73/08/15		1		73/08/15			
	14	73/10/14		2		73/10/14			
	15	73/12/13		3		73/12/13			
	16	74/02/28		4		74/02/28			
	17	74/06/25		5		74/06/06			
				6		74/08/04			
				7	388/387	74/10/18			
				7	388/387	74/12/13			
				8	393/393	75/01/17			
				9	397/397	75/03/05			
				10	404/401	75/06/19	NOS 1.0.0{R1}	404/401	75/06/09
				11	411/410	75/09/09		411/410	75/10/01
				12	?	{76/04/ ?}	NOS 1.1{R2}	419/420	76/03/08

<u>SYSTEM VERSION</u>	<u>LEV.</u>	<u>RELEASE DATE</u>
Chippewa		11/65
SCOPE 2.0		9/66
SCOPE 3.0		8/67
3.1		7/68{??}
3.1.1		8/68{??}
3.1.2		9/68{??}
3.1.3		12/13/68
3.1.4		1/24/69
3.1.5		3/69
3.1.6		7/7/69
3.2		12/8/69
3.2.1		4/70
3.3	0	9/18/70
	1	4/14/71
	2	8/24/71
	3	5/22/72
3.4	0	8/25/72
	1	5/04/73
3.4.1		11/19/73
3.4.2		5/31/74
3.4.3	0	12/31/74
	1	4/07/75
	2	6/06/75
	3	8/08/75
3.4.4	0	10/31/75
	1	2/10/76
NOS/BE 1.0		2/10/76