Exhibit 18

to Motorola's Opening Claim Construction Brief

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DICTIONARY OF
Computing

SECOND EDITION

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AVERAGE-CASE ANALYSIS

given period that a system is performing no useful function. It usually occurs when waiting for completion of some I/O function or backing-store transfer.

average-case analysis *See* algorithm.

AVL tree (height-balanced tree) A *binary search tree such that for each node the *heights of the left and right subtrees differ by at most one. Thus the *balance of each node is −1, 0, or +1. During insertion or deletion, a node in an AVL tree may become *critical* or unbalanced and then the tree has to be reorganized to maintain its balanced property. The tree is named for its originators, Adel'son-Vel'skii and Landis.

axiomatic semantics An approach to the *semantics of programming languages in which the meaning of a construct or program in a language is given by an "axiom". For a particular statement the axiom specifies what should be true after the execution of the statement in terms of what was true before the execution. This approach grew out of the work of Floyd who attached assertions to the links of flowcharts. It was developed and applied to high-level languages by Tony Hoare. It is an important technique for proving the correctness of programs.

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Babbage A machine-oriented high-level language (*MOHLL) for the GEC 4080 series machines and their derivatives. Particularly noteworthy is the fact that it is supplied by the manufacturer and entirely replaces the assembler for these machines.

backbone network The underlying nodes of a multilevel distributed network, providing communication services for the rest of the network (the hosts). The backbone network usually consists of dedicated packet, message, or circuit switches connected by high-capacity trunk circuits, along with

some special diagnostic and control equipment. An example is the *ARPANET's *IMP subnet.

An important requirement for backbone networks is that they must be extremely reliable. For this reason they are usually built out of homogeneous (essentially similar) processors and run by a centralized administration, although the rest of the network may be highly heterogeneous and under distributed authority. Distributed procedures are often used to control the operation of the backbone network in order to reduce the possibility that a single failure might disrupt the entire network. When a central control system is used, there is usually a standby system ready to take over when the active system fails.

Backbone networks are often characterized by distributed traffic patterns. *Packet switching may be used internally by backbone networks to take advantage of these traffic patterns, even though the backbone network may present a *circuit-switching appearance to external hosts (*see* virtual connection). Traffic-pattern analysis may be used to construct backbone networks that minimize certain network parameters, such as average delay, circuit costs, etc. Backbone networks may themselves be multilevel, incorporating low-capacity terrestrial links, high-capacity terrestrial links, and satellite links.

back-end processor A processor that is used for some specialized function such as database management, or a special-purpose arithmetic and logic unit. *Compare* front-end processor.

background processing Processing without the opportunity for interaction with the user, within a system that provides for interaction by *foreground processing. The jobs are submitted by users from terminals but are not processed immediately. They are placed into a *background queue* and are run off as resources become available.

backing store (auxiliary memory; bulk memory; secondary memory) The memory

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