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12/970,935 16 December 2010 (16.12.2010) US(71) Applicant (for all designated States except US): **MICROSOFT CORPORATION** [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).(72) Inventor: **SPRADLIN, Jeremiah**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US).

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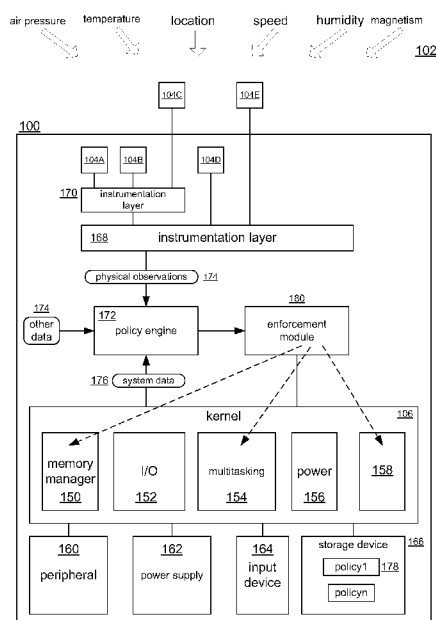
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: KERNEL AWARENESS OF PHYSICAL ENVIRONMENT

**FIG. 3**

(57) **Abstract:** Techniques to implement physically aware kernels are described. A kernel or operating system controlling resources and processing on a computer is rendered environmentally aware. The physical environment of a computer is measured by one or more sensors. The measurements or observations are evaluated. When a pre-specified environmental condition exists according to the measurements or observations, the kernel is adapted accordingly. The core behavior of the kernel, such as how it manages memory or how it manages processes, is modified in light of sensed environmental conditions. That is, kernel-level functionality, as opposed to user-space application code, is modified in response to specific environmental conditions. An embodiment may have a policy engine that monitors sensor observations and an enforcement module that reaches into the kernel to modify the kernel based on conclusions reached by the policy engine. In another embodiment, the kernel itself stores, monitors, and responds to environment data.

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- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

A. CLASSIFICATION OF SUBJECT MATTER**G06F 9/22(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F 9/22; G06F 15/00; H04M 1/00; H04Q 7/20; G06F 21/00; G06F 3/038

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: based, environment, sensor, appropriate, operating system, select,

Google Scholar DB & Keywords: component, operating system, adapt, environment.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0163226 A1 (BURGES, K. et al.) 25 June 2009	1-3, 6-8, 10
A	See paragraphs [0001], [0023], [0025], [0028]-[0031], [0045], claims 1-3, 5, and figures 1, 2.	4-5, 9
A	KON, F. et al. 2K : A Reflective, Component-Based Operating System for Rapidly Changing Environments, Lecture Notes in Computer Science, 1998, Vol. 1543, IN: Object-Oriented Technology: ECOOP' 98 Workshop Reader, (KON, F. et al.) See abstract, chapter 1. and 3.1.	1-10
A	KR 10-2008-0052320 A (Electronics and Telecommunications Research Institute) 11 June 2008 See abstract, paragraphs [0015]-[0026], claim 1, and figures 2-3.	1-10
A	US 2008-0218501 A1 (DIAMOND, M.B.) 11 September 2008 See paragraphs [0027], [0041]-[0043], and figures 1A, 4.	1-10



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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KR 10-2008-0052320 A	11.06.2008	None	
US 2008-0218501 A1	11.09.2008	None	