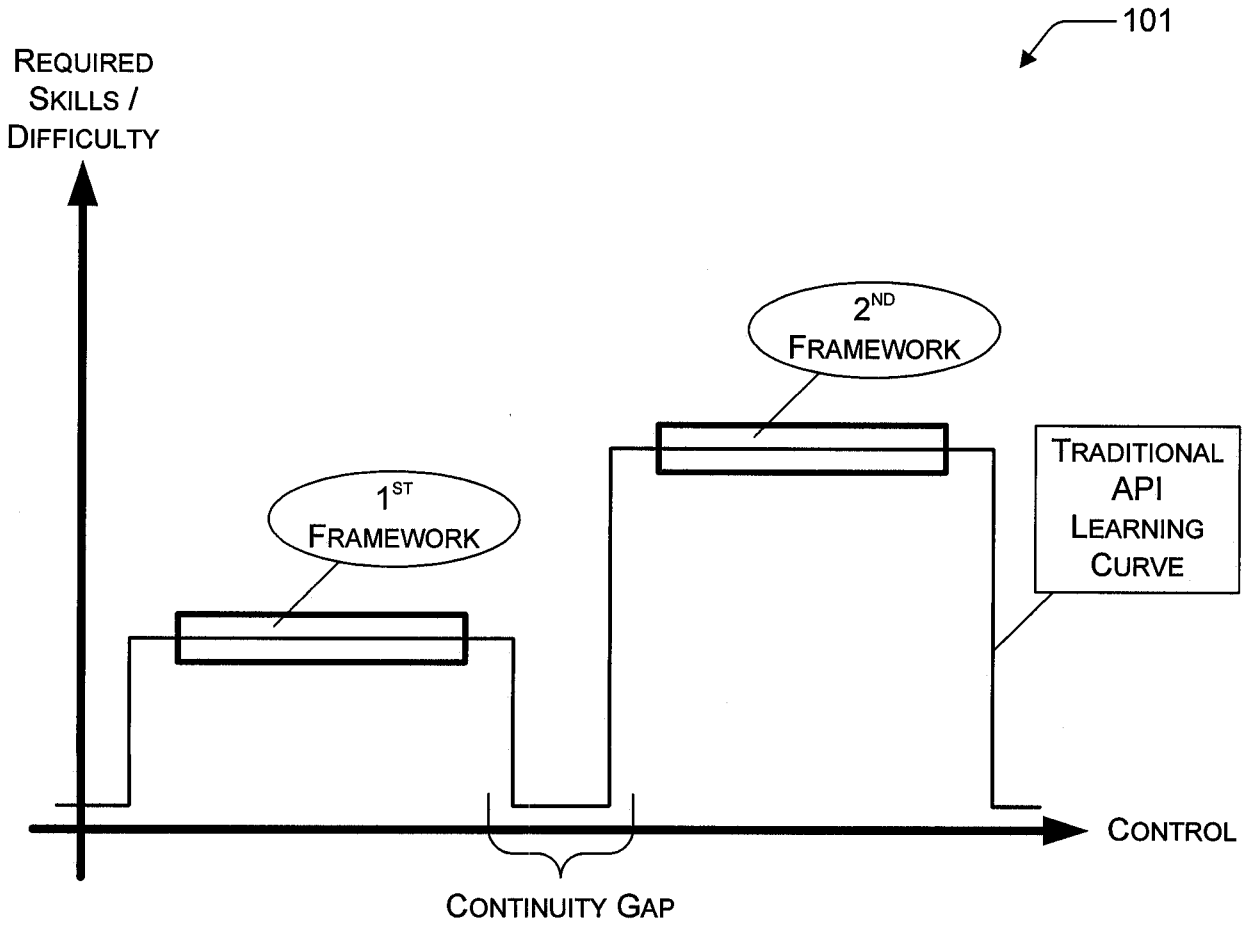


FIG. 1 Prior Art

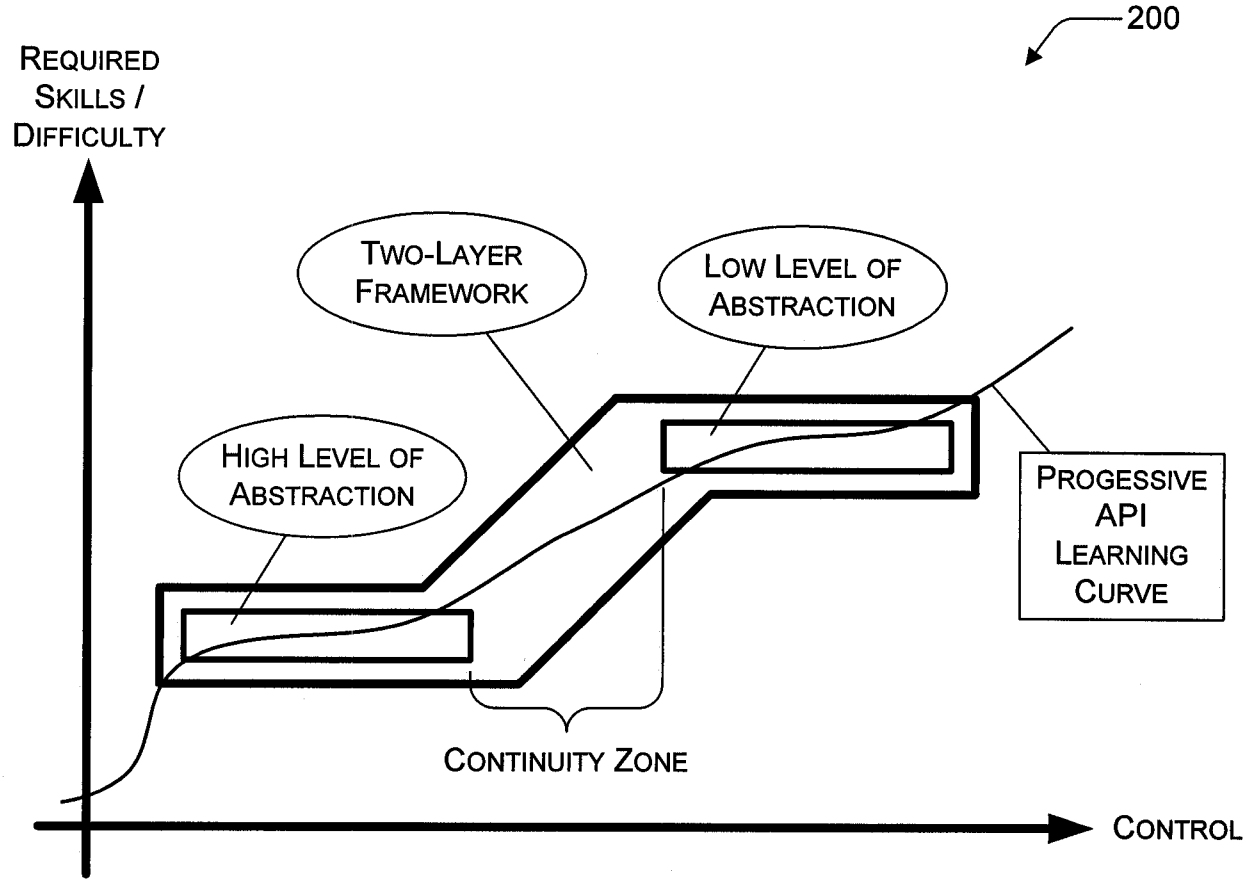

200
REQUIRED SKILLS / DIFFICULTY
TWO-LAYER FRAMEWORK
LOW LEVEL OF ABSTRACTION
HIGH LEVEL OF ABSTRACTION
PROGESSIVE API LEARNING CURVE
CONTINUITY ZONE
CONTROL

FIG. 2

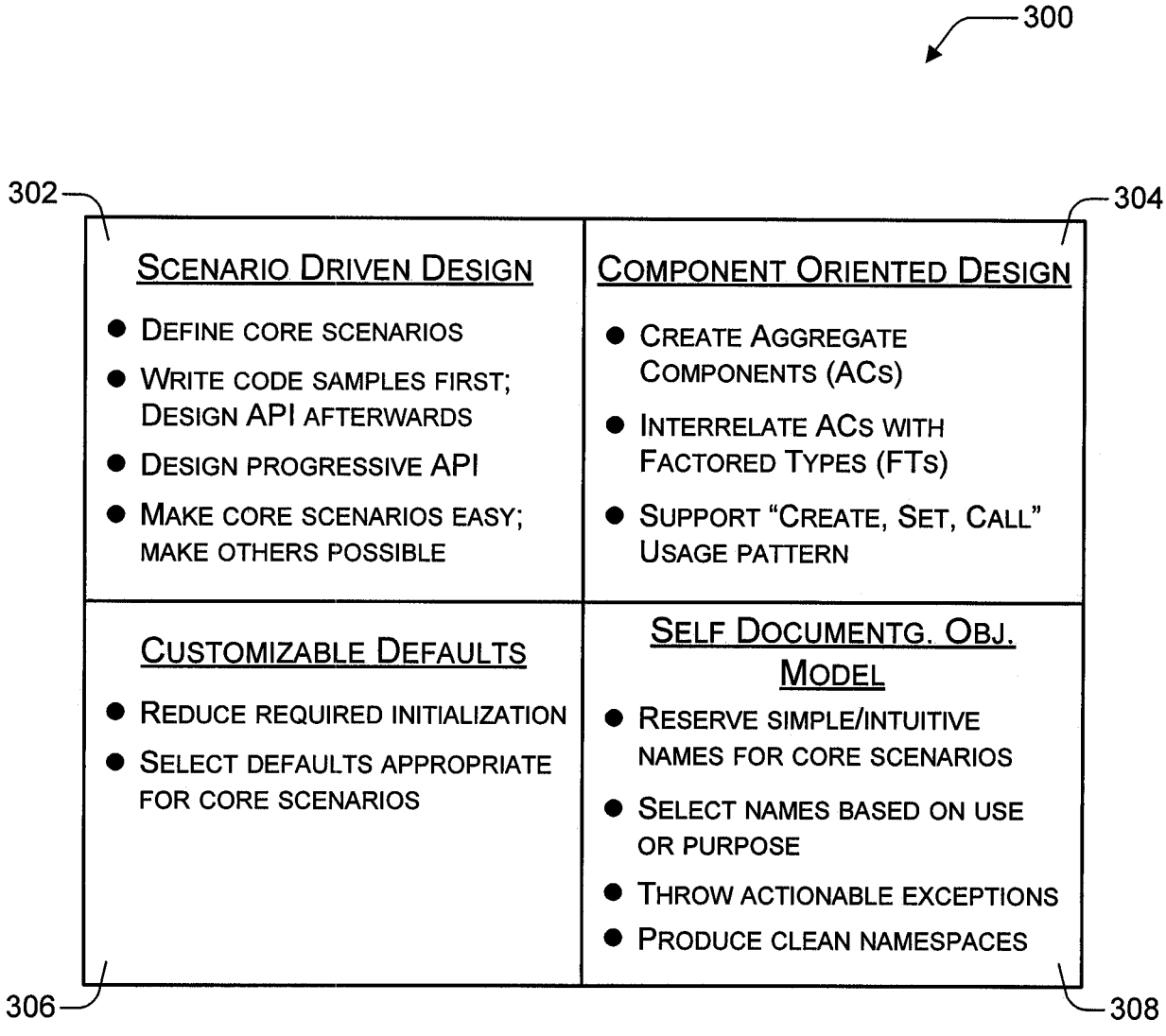

300
302
304
SCENARIO DRIVEN DESIGN
DEFINE CORE SCENARIOS
WRITE CODE SAMPLES FIRST; DESIGN API AFTERWARDS
DESIGN PROGRESSIVE API
MAKE CORE SCENARIOS EASY; MAKE OTHERS POSSIBLE
COMPONENT ORIENTED DESIGN
CREATE AGGREGATE COMPONENTS (ACS)
INTERRELATE ACS WITH FACTORED TYPES (FTS)
SUPPORT "CREATE, SET, CALL" USAGE PATTERN
CUSTOMIZABLE DEFAULTS
REDUCE REQUIRED INITIALIZATION
SELECT DEFAULTS APPROPRIATE FOR CORE SCENARIOS
SELF DOCUMENTG. OBJ. MODEL
RESERVE SIMPLE/INTUITIVE NAMES FOR CORE SCENARIOS
SELECT NAMES BASED ON USE OR PURPOSE
THROW ACTIONABLE EXCEPTIONS
PRODUCE CLEAN NAMESPACES
306
308

FIG. 3

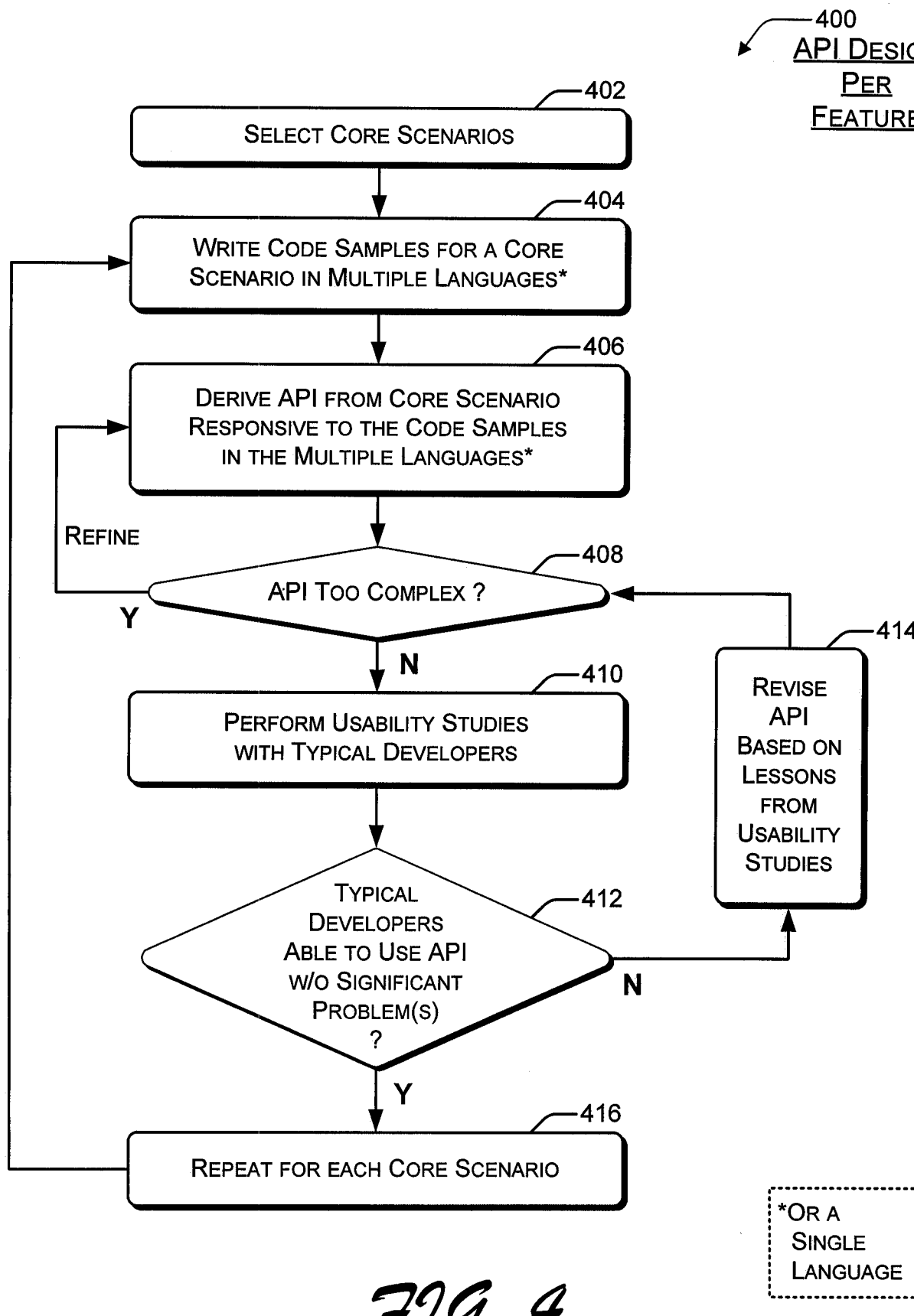

400
API DESIGN PER FEATURE
402
SELECT CORE SCENARIOS
404
WRITE CODE SAMPLES FOR A CORE SCENARIO IN MULTIPLE LANGUAGES*
406
DERIVE API FROM CORE SCENARIO RESPONSIVE TO THE CODE SAMPLES IN THE MULTIPLE LANGUAGES*
REFINE
408
API TOO COMPLEX ?
Y
N
410
PERFORM USABILITY STUDIES WITH TYPICAL DEVELOPERS
414
REVISE API BASED ON LESSONS FROM USABILITY STUDIES
TYPICAL DEVELOPERS ABLE TO USE API W/O SIGNIFICANT PROBLEM(S) ?
412
N
Y
416
REPEAT FOR EACH CORE SCENARIO
*OR A SINGLE LANGUAGE

FIG. 4

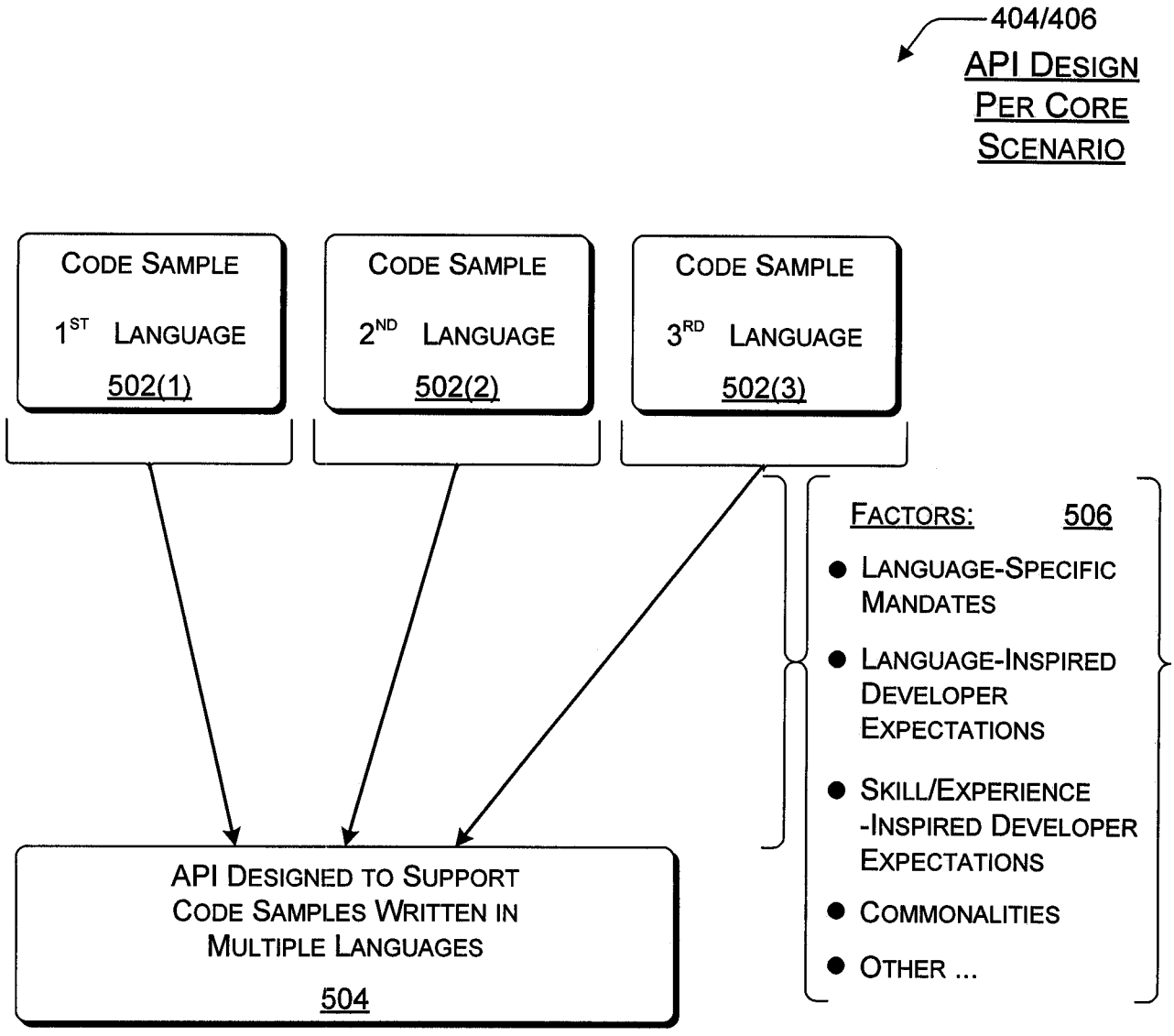

404/406
API DESIGN PER CORE SCENARIO
CODE SAMPLE 1ST LANGUAGE 502(1)
CODE SAMPLE 2ND LANGUAGE 502(2)
CODE SAMPLE 3RD LANGUAGE 502(3)
FACTORS: 506
LANGUAGE-SPECIFIC MANDATES
LANGUAGE-INSPIRED DEVELOPER EXPECTATIONS
SKILL/EXPERIENCE -INSPIRED DEVELOPER EXPECTATIONS
COMMONALITIES
OTHER ...
API DESIGNED TO SUPPORT CODE SAMPLES WRITTEN IN MULTIPLE LANGUAGES 504

FIG. 5

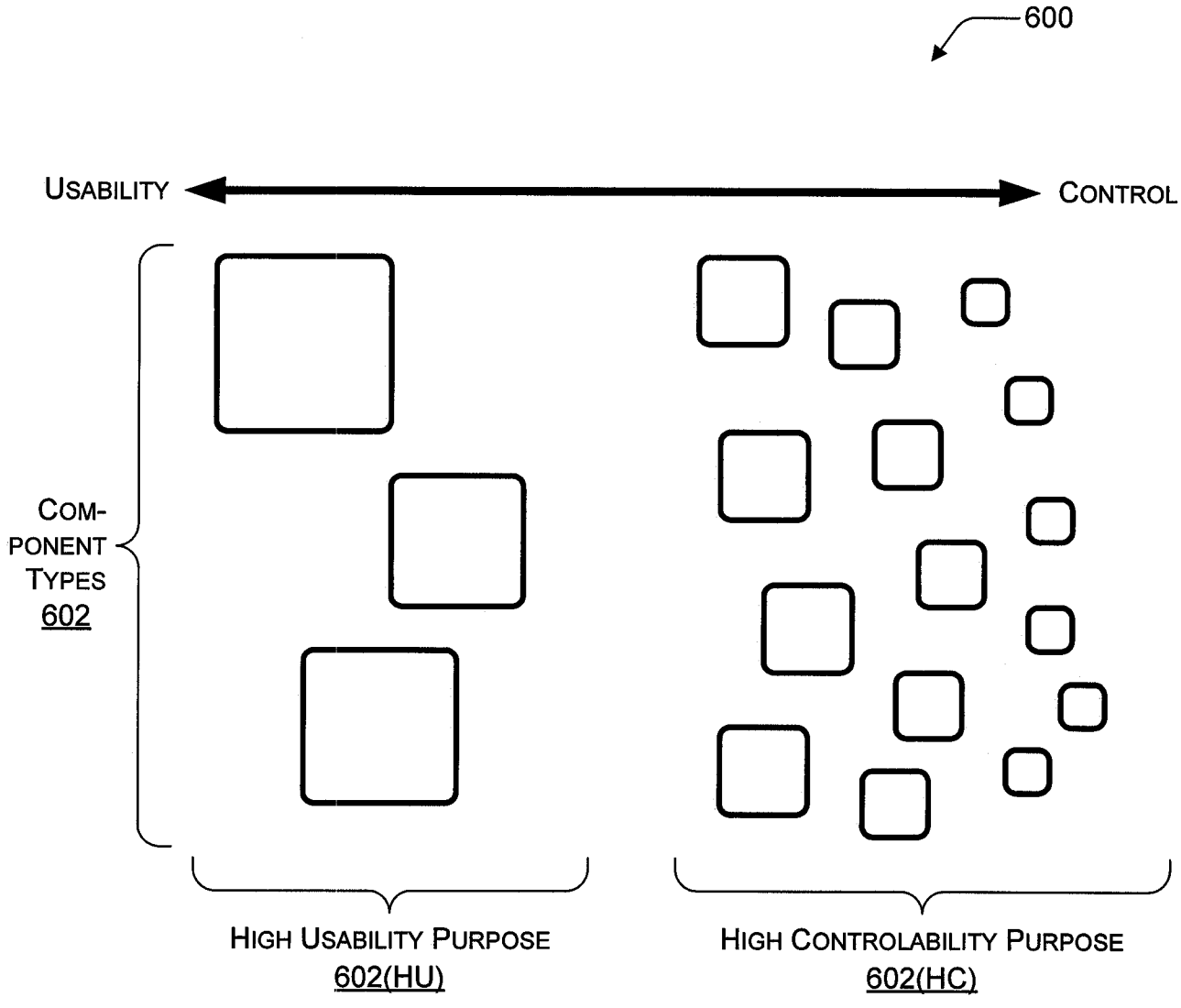
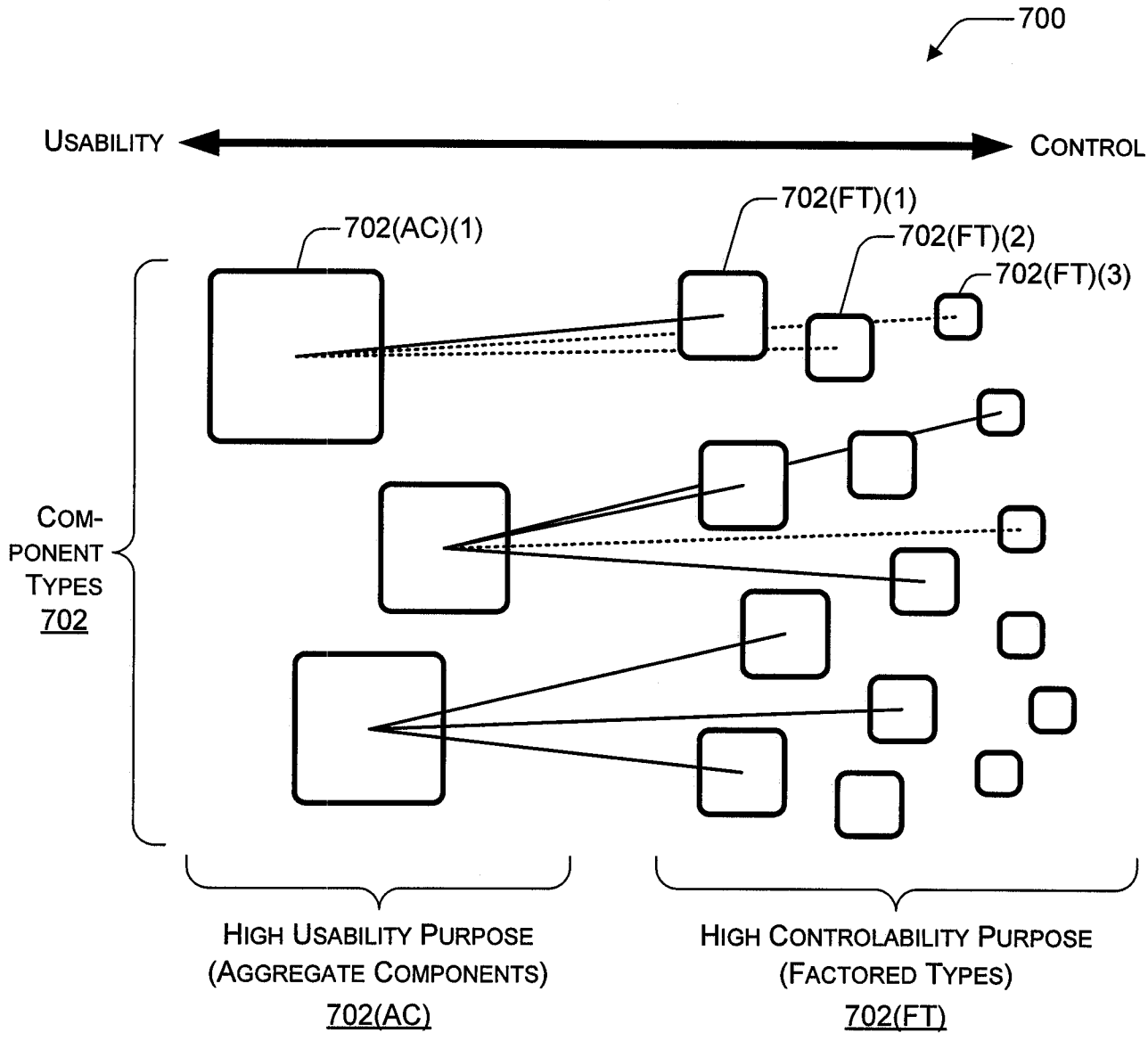

600
USABILITY
CONTROL
COM-
PONENT
TYPES
602
HIGH USABILITY PURPOSE
602(HU)
HIGH CONTROLABILITY PURPOSE
602(HC)

FIG. 6



KEY:	704
EXPOSED FACTORED TYPES	———
ENCAPSULATED FACTORED TYPES	-----------

FIG. 7

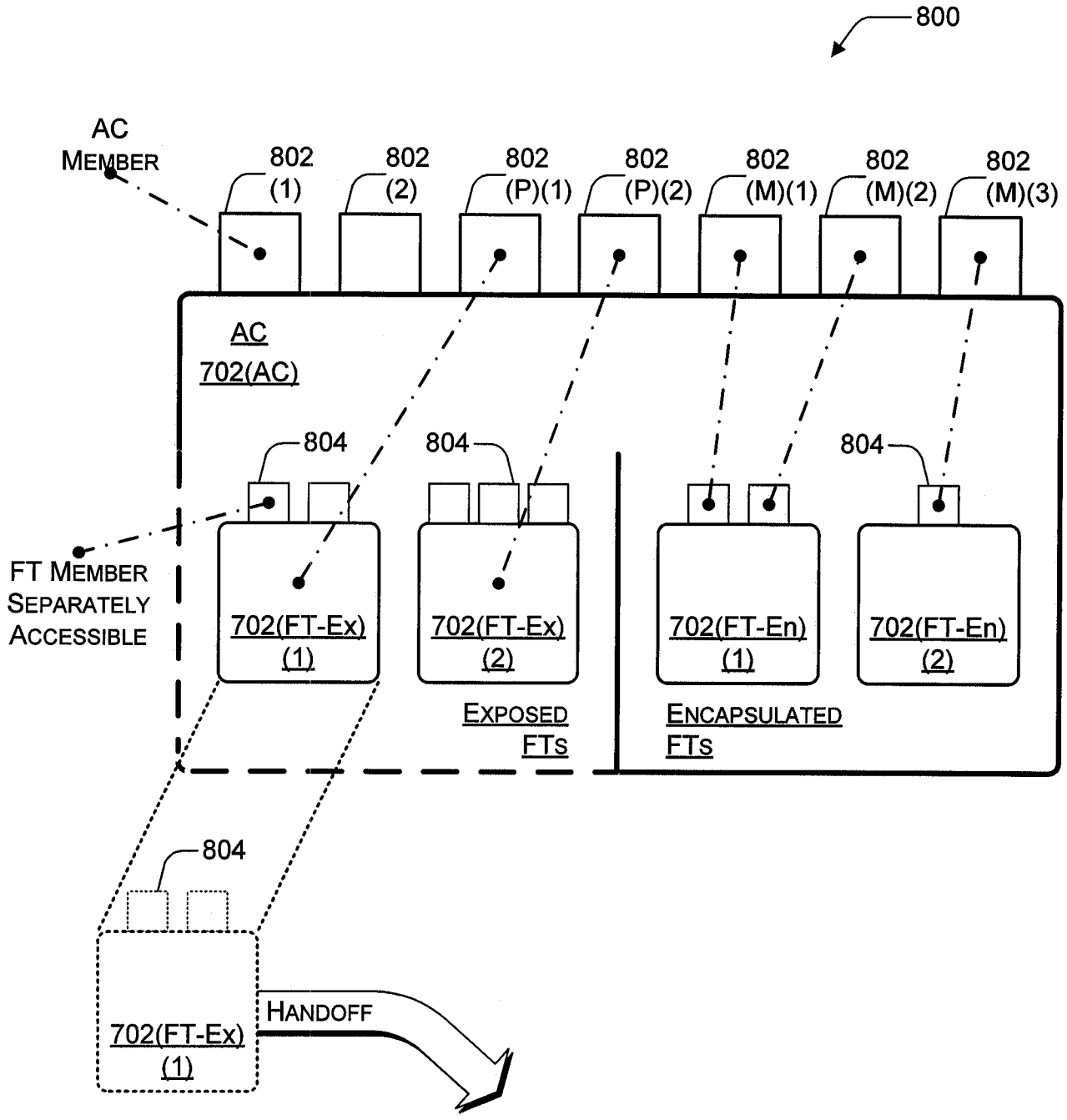

800
AC MEMBER
802 (1)
802 (2)
802 (P)(1)
802 (P)(2)
802 (M)(1)
802 (M)(2)
802 (M)(3)
AC 702(AC)
804
804
804
FT MEMBER SEPARATELY ACCESSIBLE
702(FT-Ex) (1)
702(FT-Ex) (2)
702(FT-En) (1)
702(FT-En) (2)
EXPOSED FTs
ENCAPSULATED FTs
804
HANDOFF
702(FT-Ex) (1)

FIG. 8

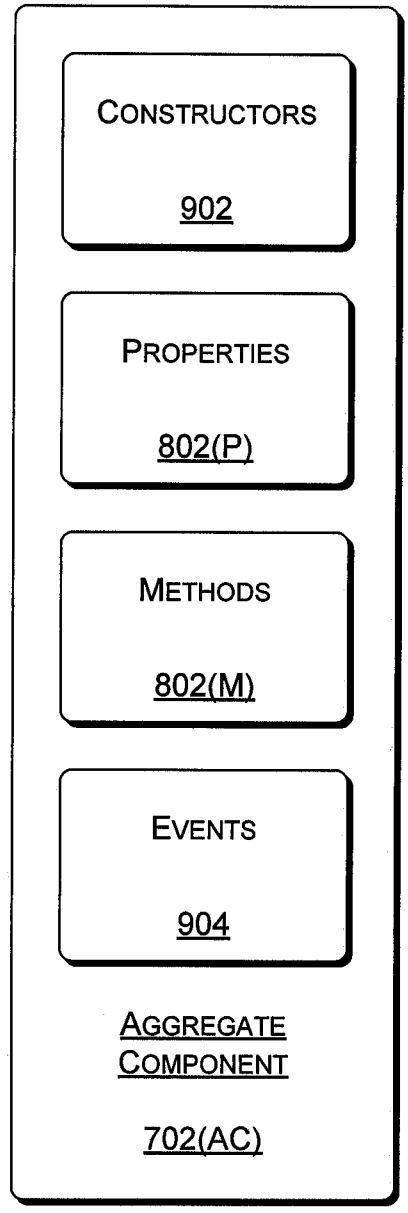

CONSTRUCTORS
902
PROPERTIES
802(P)
METHODS
802(M)
EVENTS
904
AGGREGATE COMPONENT
702(AC)

FIG. 9

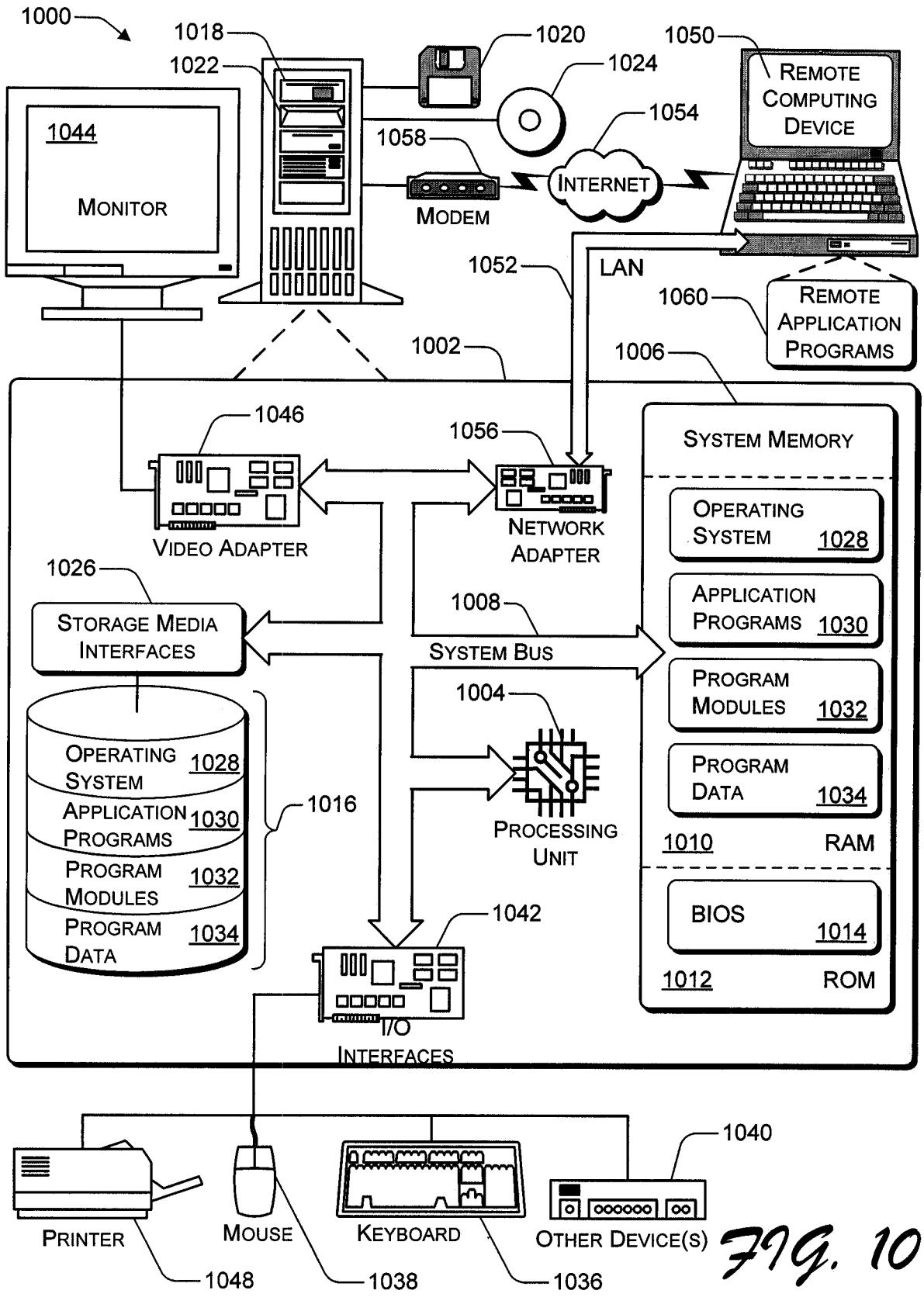

1000
1018
1022
1020
1024
1050
REMOTE COMPUTING DEVICE
1044
MONITOR
1058
MODEM
1054
INTERNET
1052
LAN
1060
REMOTE APPLICATION PROGRAMS
1002
1006
1046
VIDEO ADAPTER
1056
NETWORK ADAPTER
SYSTEM MEMORY
OPERATING SYSTEM 1028
APPLICATION PROGRAMS 1030
PROGRAM MODULES 1032
PROGRAM DATA 1034
1010 RAM
BIOS 1014
1012 ROM
1026
STORAGE MEDIA INTERFACES
1008
SYSTEM BUS
1004
PROCESSING UNIT
OPERATING SYSTEM 1028
APPLICATION PROGRAMS 1030
PROGRAM MODULES 1032
PROGRAM DATA 1034
1016
1042
I/O INTERFACES
1040
PRINTER
MOUSE
KEYBOARD
OTHER DEVICE(S)
1048
1038
1036

FIG. 10