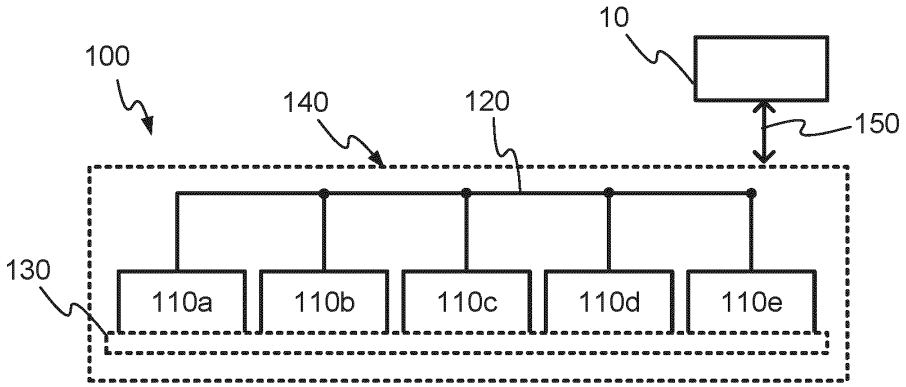


Fig. 1

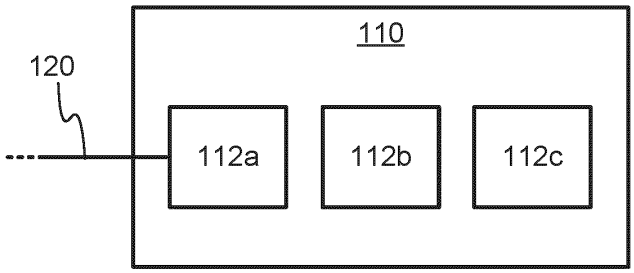


Fig. 2

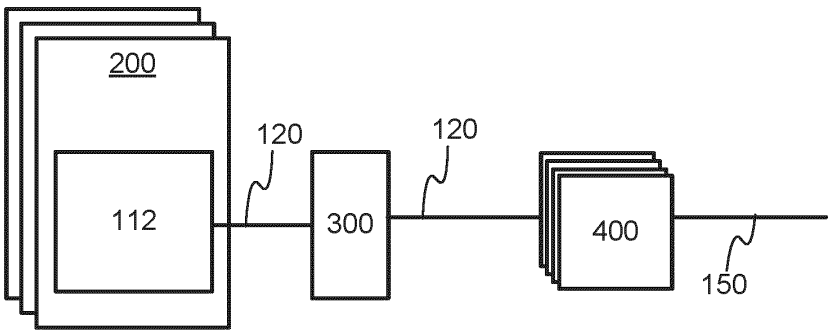


Fig. 3

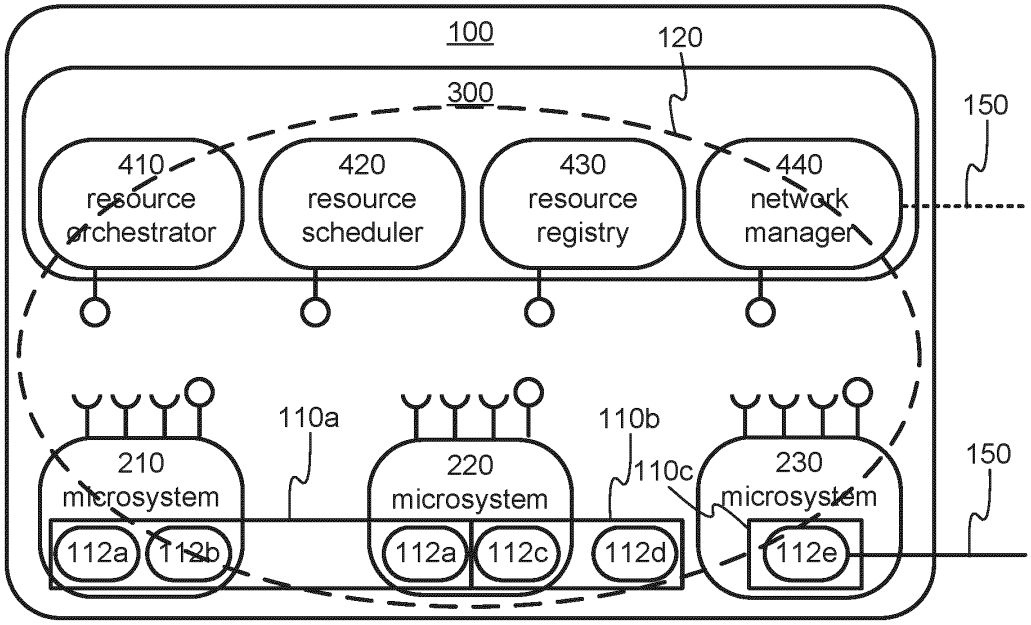

100
120
300
150
410
resource
orchestrator
420
resource
scheduler
430
resource
registry
440
network
manager
110a
110b
110c
210
microsystem
220
microsystem
230
microsystem
112a
112b
112a
112c
112d
112e
150

Fig. 4

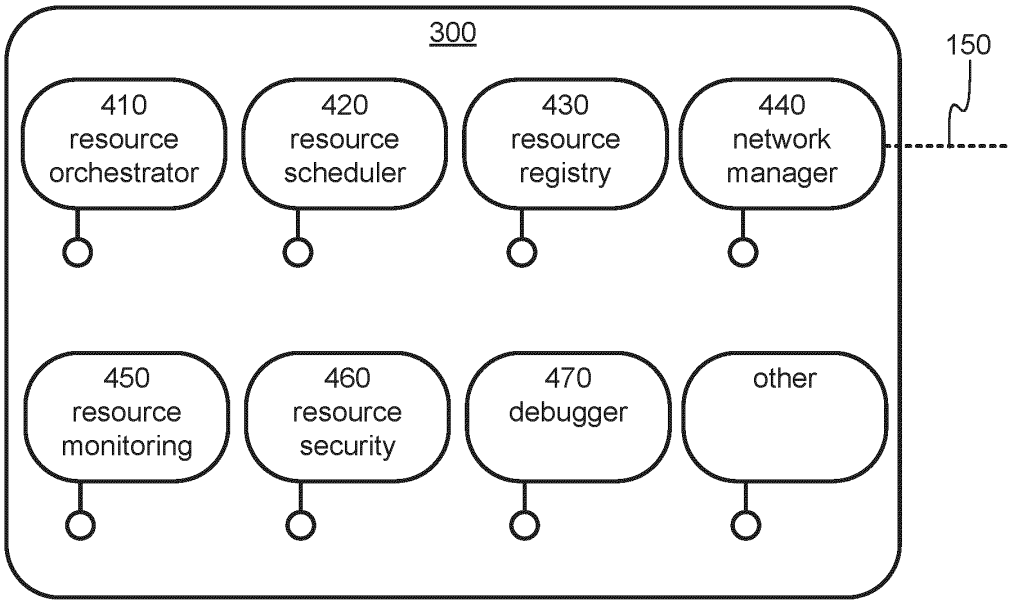

300
150
410
resource
orchestrator
420
resource
scheduler
430
resource
registry
440
network
manager
450
resource
monitoring
460
resource
security
470
debugger
other

Fig. 5

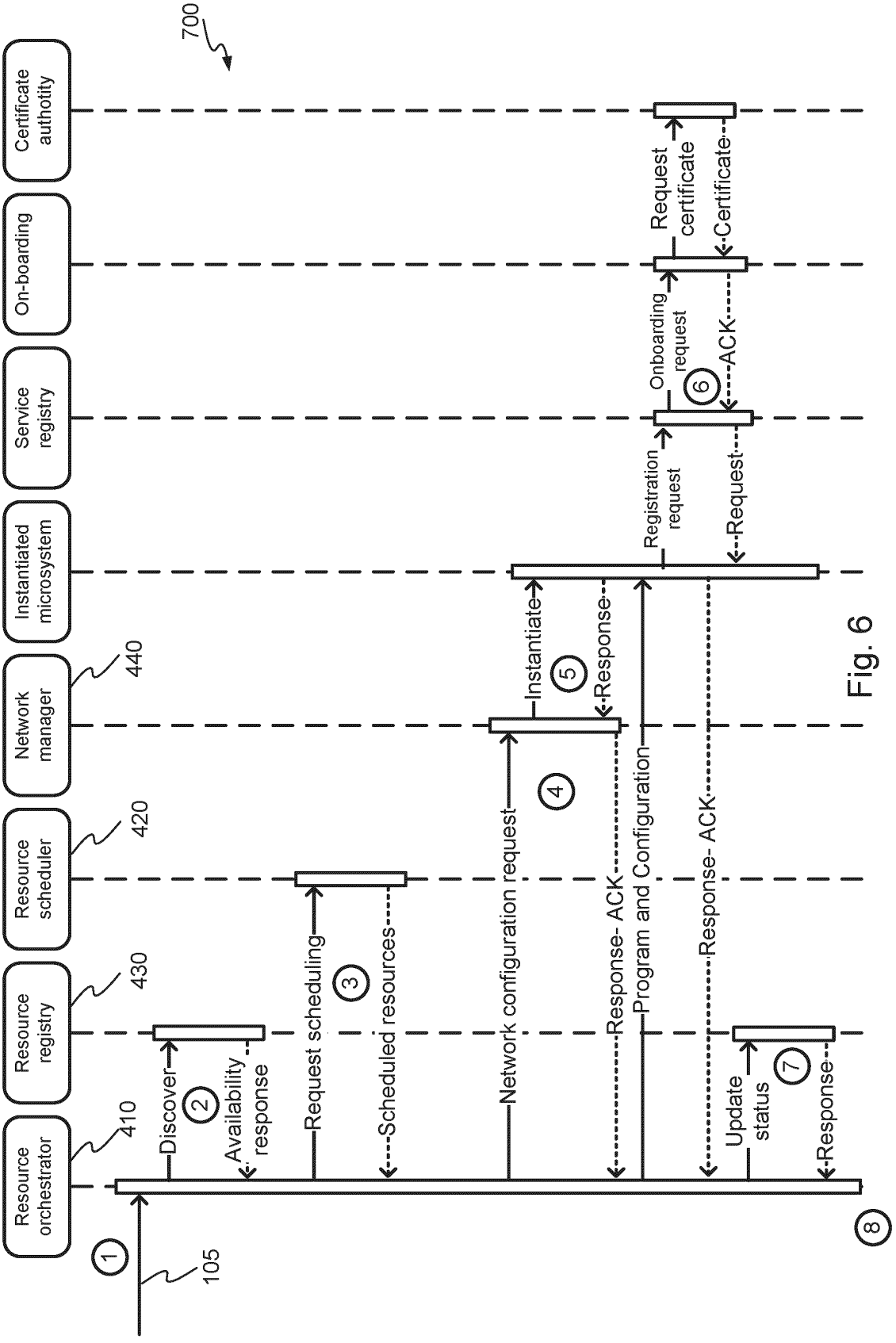

700
Resource orchestrator
410
Resource registry
430
Resource scheduler
420
Network manager
440
Instantiated microsystem
Service registry
On-boarding
Certificate authority
105
1
Discover
2
Availability response
Request scheduling
3
Scheduled resources
Network configuration request
4
Instantiate
5
Response
Response- ACK
Program and Configuration
Registration request
Request
Onboarding request
6
ACK
Request certificate
Certificate
Response- ACK
Update status
7
Response
8

Fig. 6

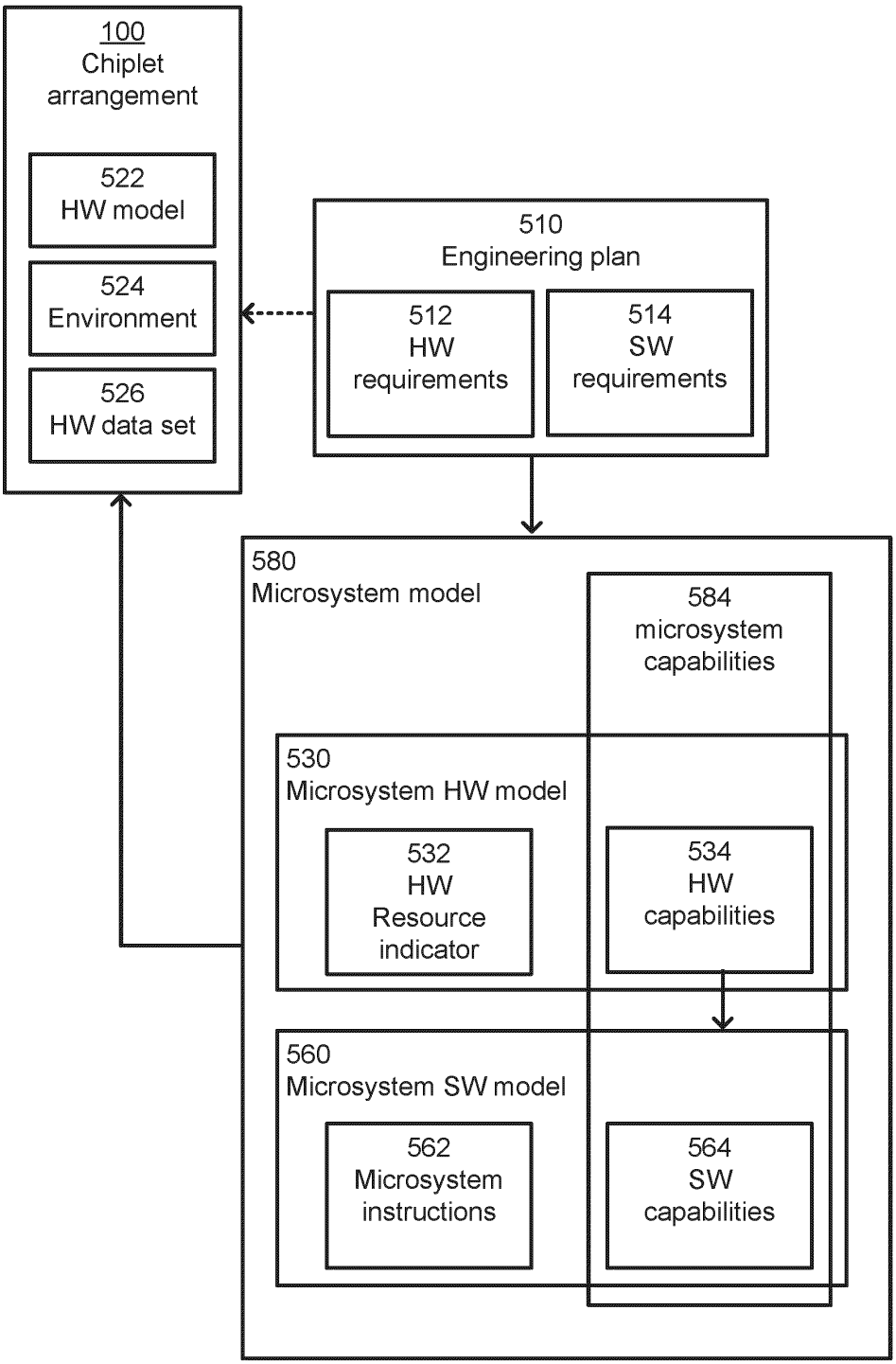

100
Chiplet arrangement
522
HW model
524
Environment
526
HW data set
510
Engineering plan
512
HW requirements
514
SW requirements
580
Microsystem model
584
microsystem capabilities
530
Microsystem HW model
532
HW Resource indicator
534
HW capabilities
560
Microsystem SW model
562
Microsystem instructions
564
SW capabilities

Fig. 7

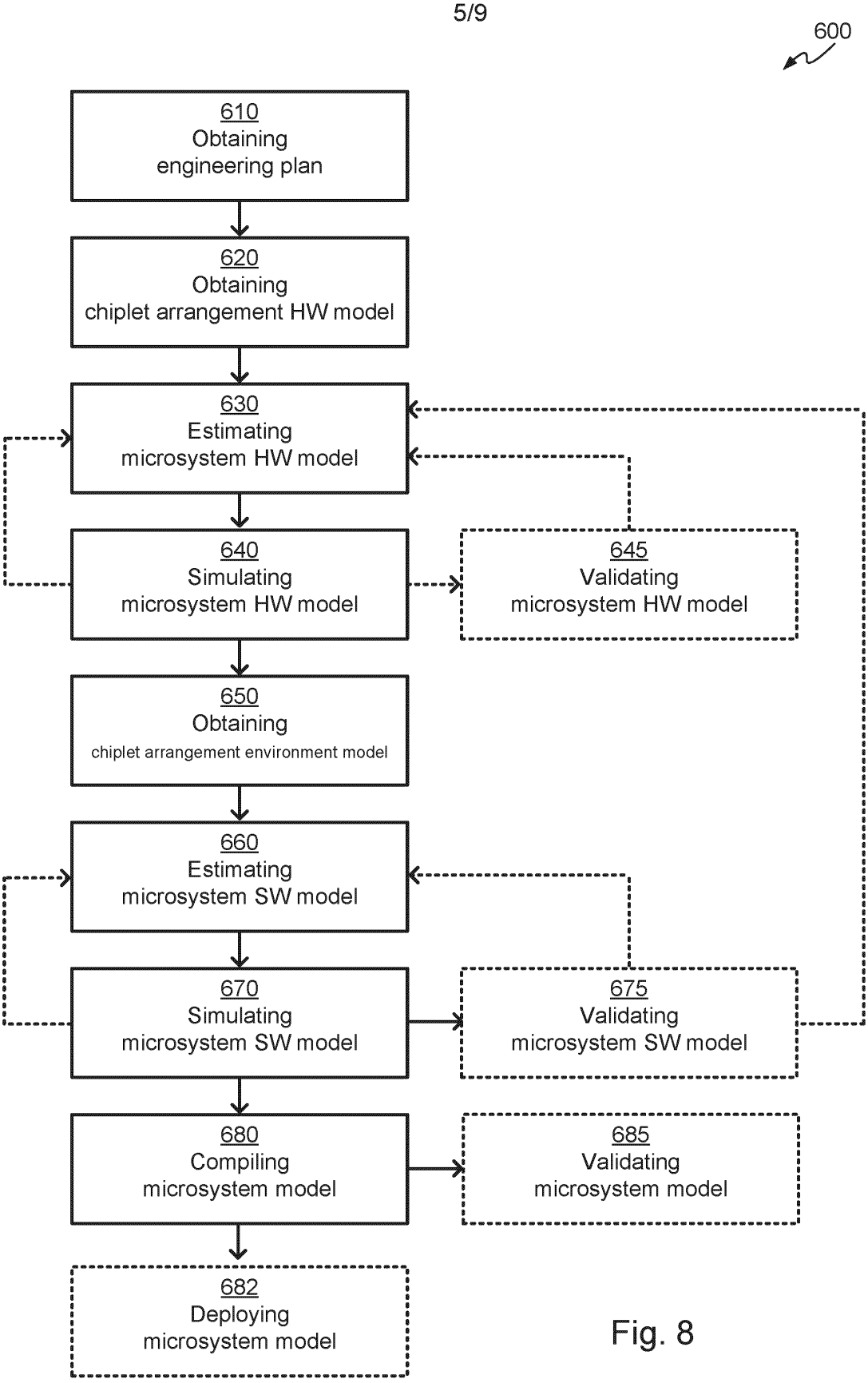

600
610
Obtaining
engineering plan
620
Obtaining
chiplet arrangement HW model
630
Estimating
microsystem HW model
640
Simulating
microsystem HW model
645
Validating
microsystem HW model
650
Obtaining
chiplet arrangement environment model
660
Estimating
microsystem SW model
670
Simulating
microsystem SW model
675
Validating
microsystem SW model
680
Compiling
microsystem model
685
Validating
microsystem model
682
Deploying
microsystem model

Fig. 8

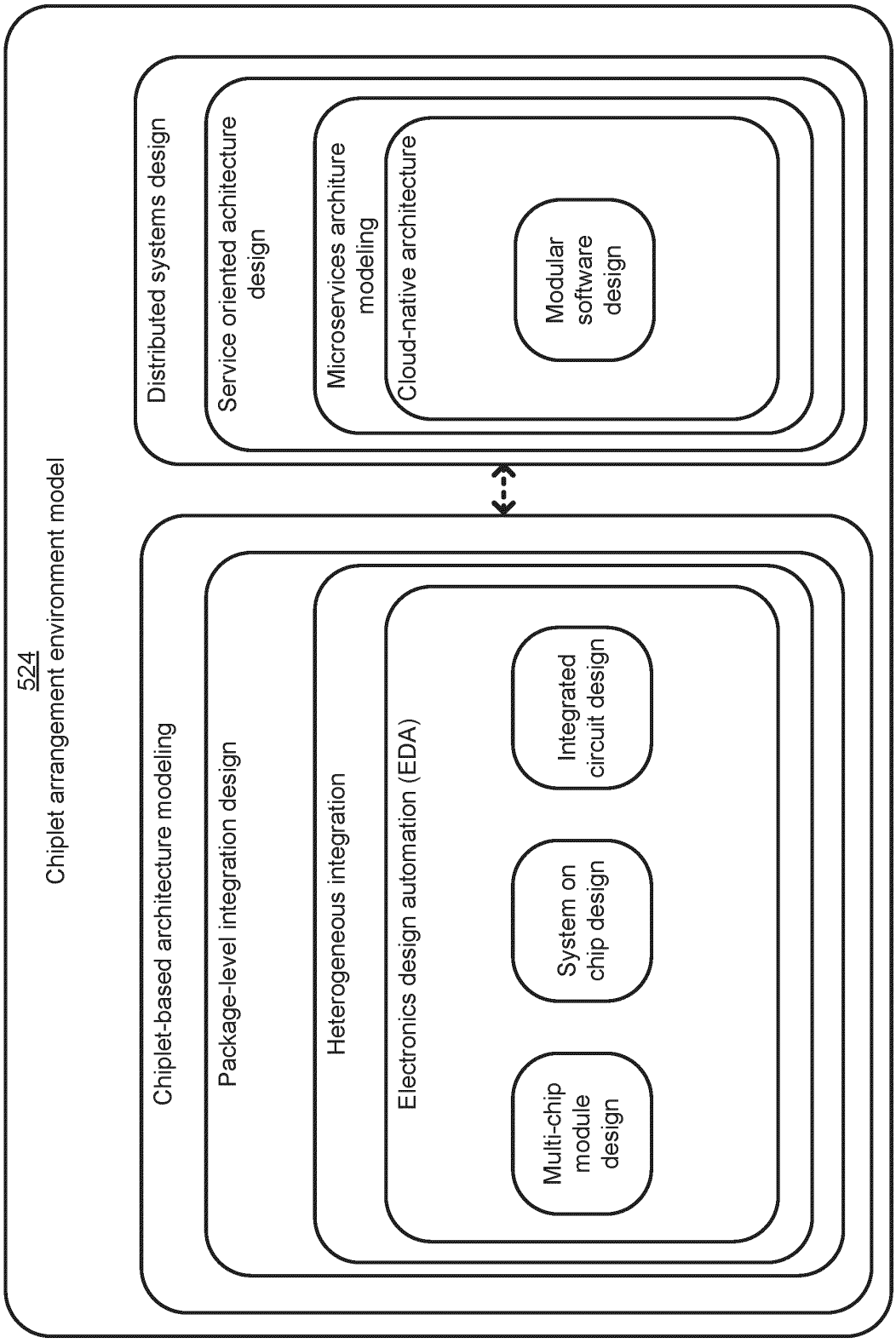

524
Chiplet arrangement environment model
Chiplet-based architecture modeling
Package-level integration design
Heterogeneous integration
Electronics design automation (EDA)
Multi-chip module design
System on chip design
Integrated circuit design
Distributed systems design
Service oriented achitecture design
Microservices architure modeling
Cloud-native architecture
Modular software design

Fig. 9

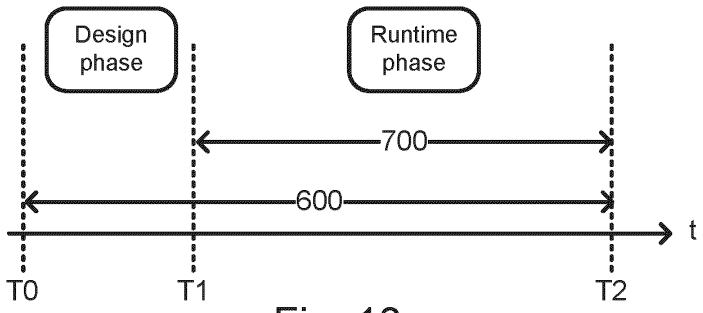


Fig. 10

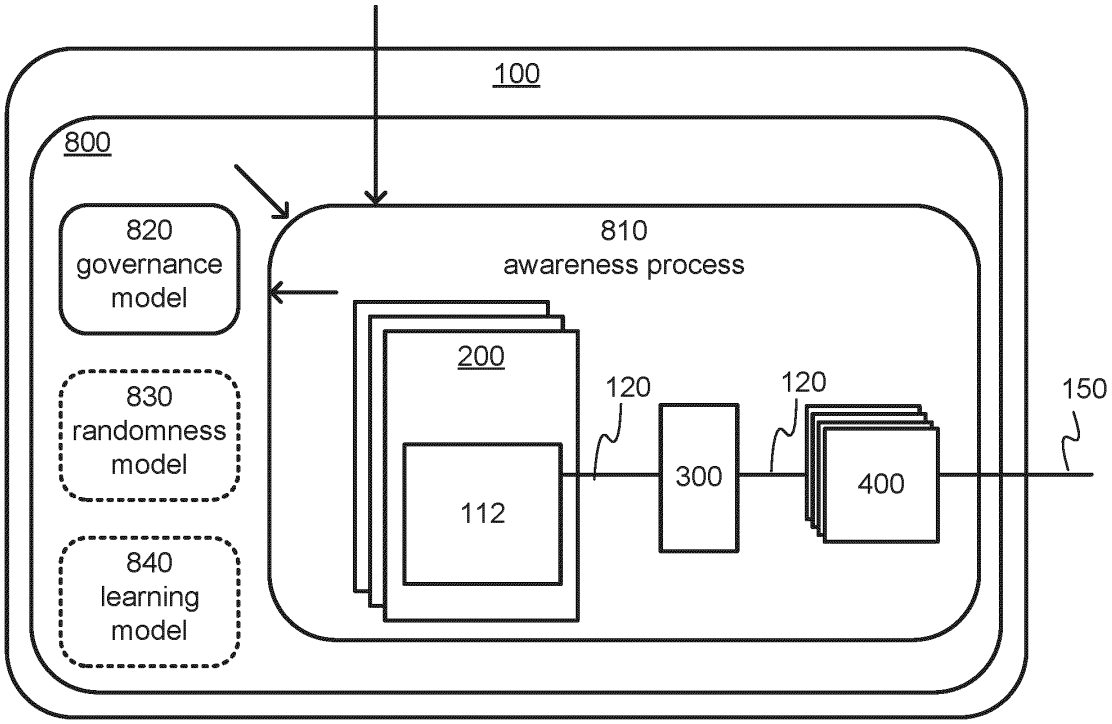


Fig. 11

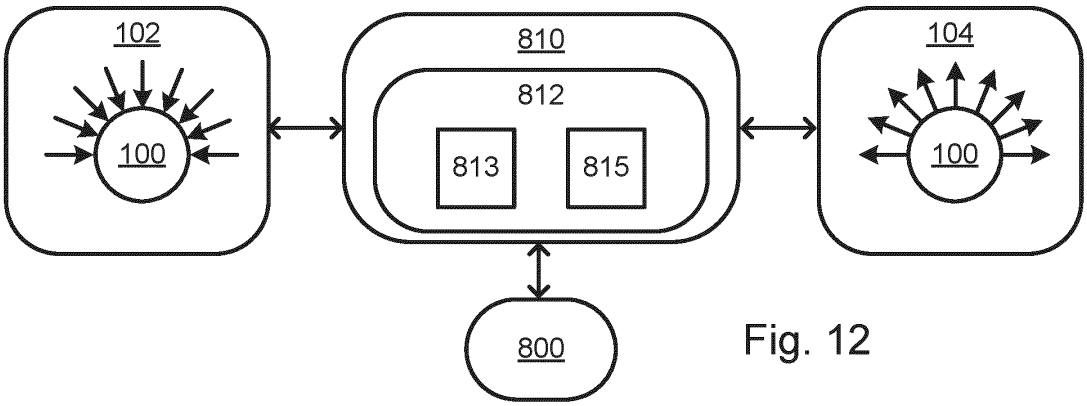


Fig. 12

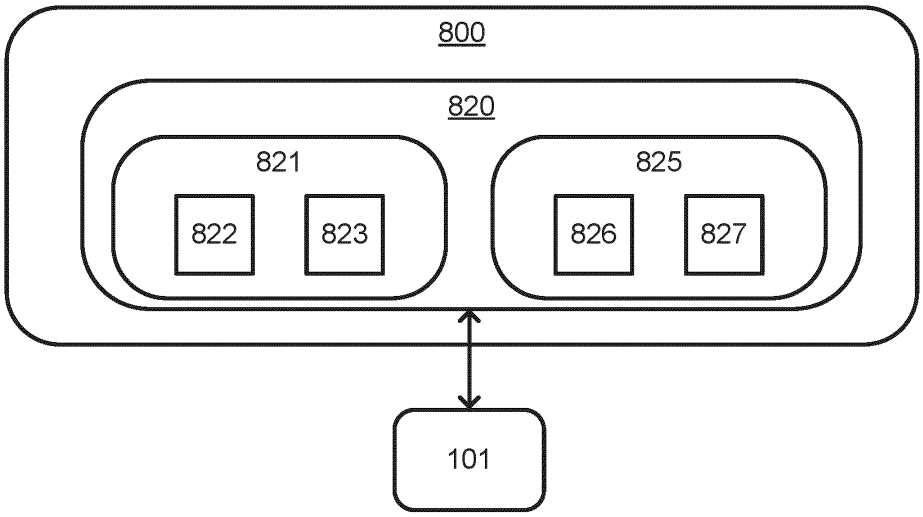

800
820
821
822
823
825
826
827
101

Fig. 13

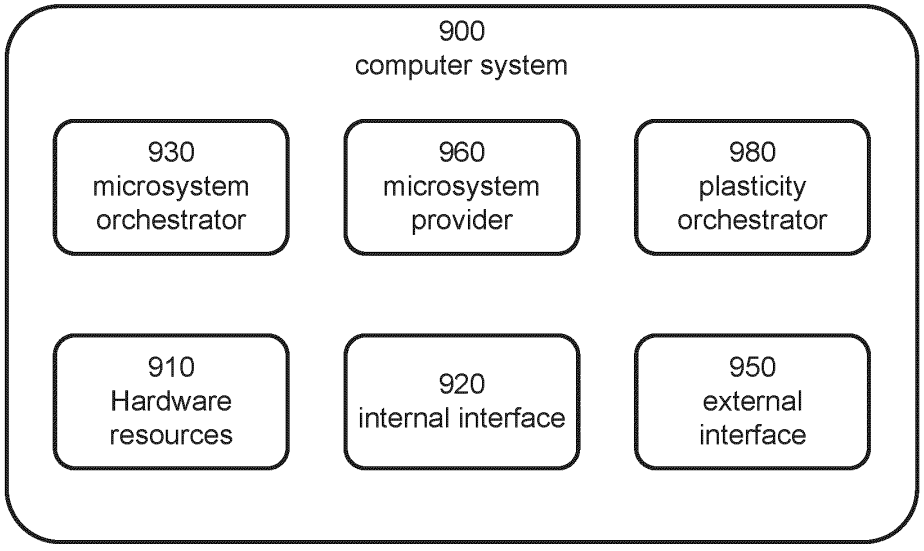

900
computer system
930
microsystem
orchestrator
960
microsystem
provider
980
plasticity
orchestrator
910
Hardware
resources
920
internal interface
950
external
interface

Fig. 14

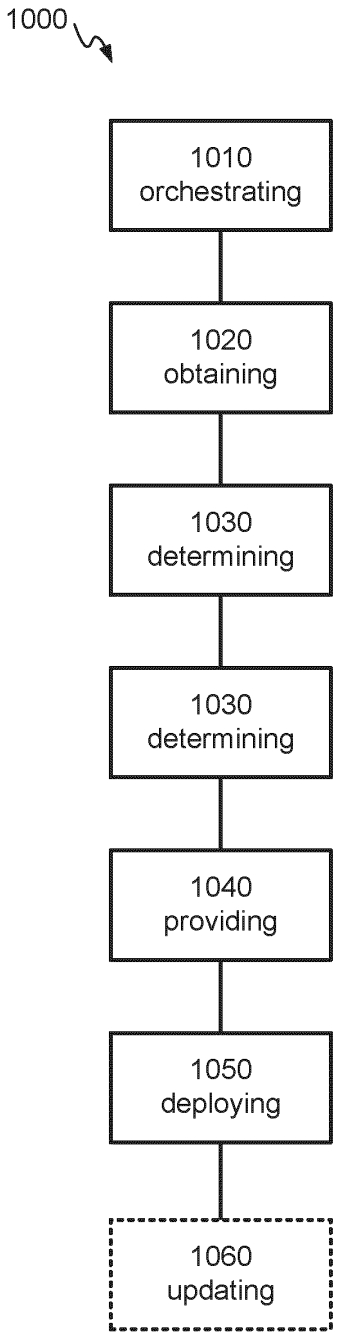

1000
1010
orchestrating
1020
obtaining
1030
determining
1030
determining
1040
providing
1050
deploying
1060
updating

Fig. 15

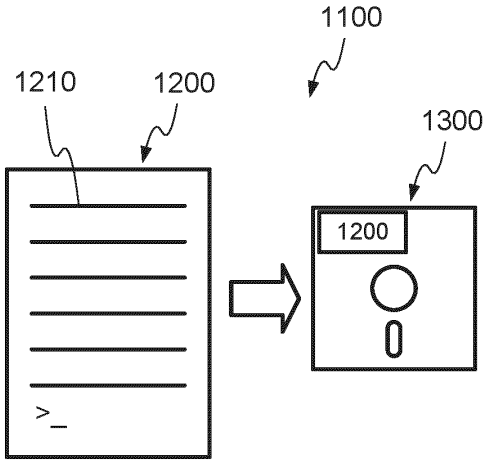

1100
1210
1200
1300
1200
>_

Fig. 16