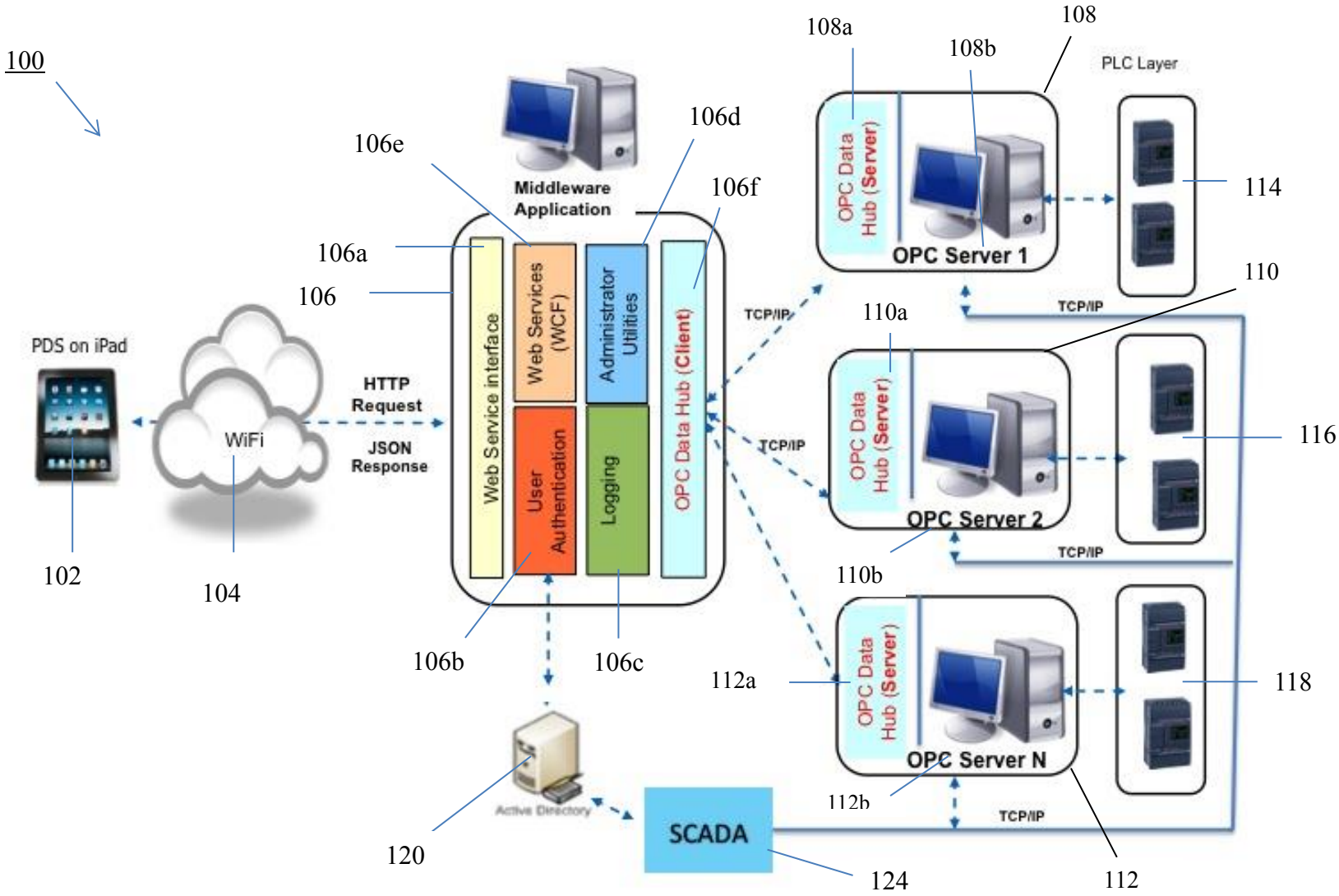
100
PDS on iPad
WiFi
HTTP Request
JSON Response
Middleware Application
Web Service interface
Web Services (WCF)
Administrator Utilities
User Authentication
Logging
OPC Data Hub (Client)
TCP/IP
OPC Data Hub (Server)
OPC Server 1
OPC Server 2
OPC Server N
PLC Layer
SCADA
Active Directory
102
104
106
106a
106b
106c
106d
106e
106f
108
108a
108b
110
110a
110b
112
112a
112b
114
116
118
120
124

Figure 1

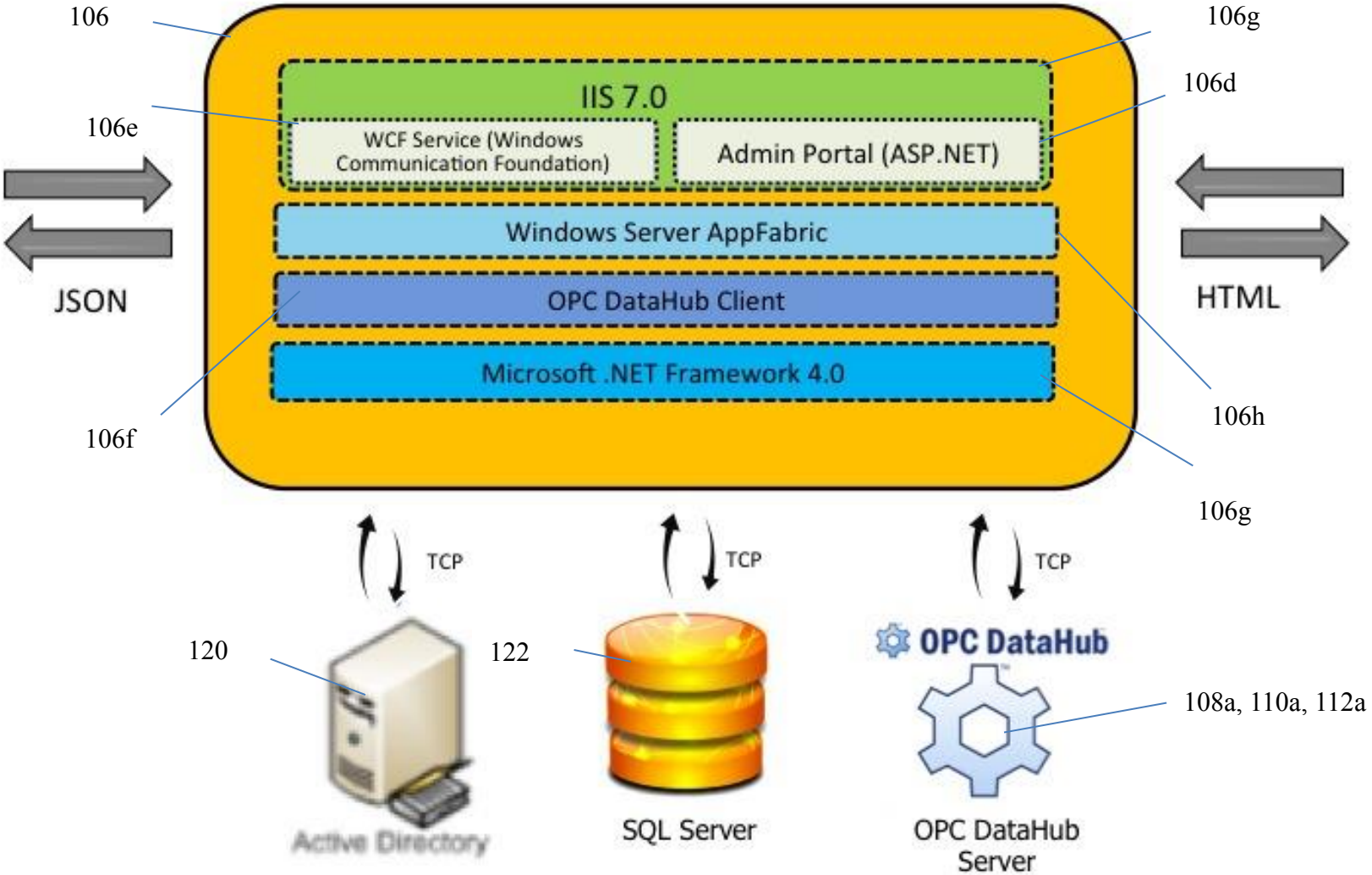
106
106g
106d
106e
IIS 7.0
WCF Service (Windows Communication Foundation)
Admin Portal (ASP.NET)
Windows Server AppFabric
OPC DataHub Client
Microsoft .NET Framework 4.0
JSON
HTML
106f
106h
106g
TCP
TCP
TCP
120
122
OPC DataHub
108a, 110a, 112a
Active Directory
SQL Server
OPC DataHub Server

Figure 2

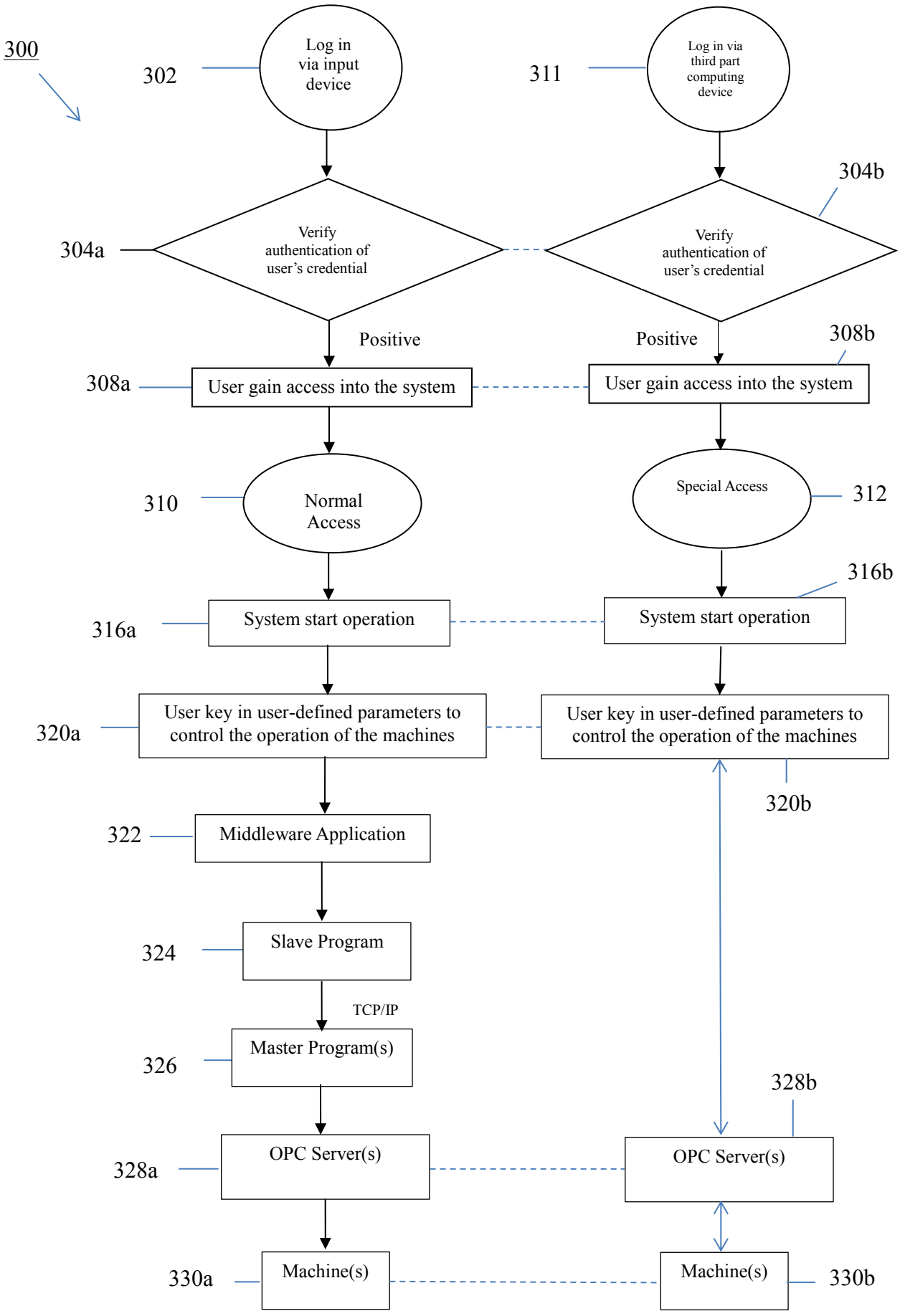
300
302
Log in via input device
311
Log in via third part computing device
304a
Verify authentication of user's credential
304b
Verify authentication of user's credential
Positive
Positive
308a
User gain access into the system
308b
User gain access into the system
310
Normal Access
Special Access
312
316a
System start operation
316b
System start operation
320a
User key in user-defined parameters to control the operation of the machines
User key in user-defined parameters to control the operation of the machines
320b
322
Middleware Application
324
Slave Program
TCP/IP
326
Master Program(s)
328b
328a
OPC Server(s)
OPC Server(s)
330a
Machine(s)
Machine(s)
330b

Figure 3

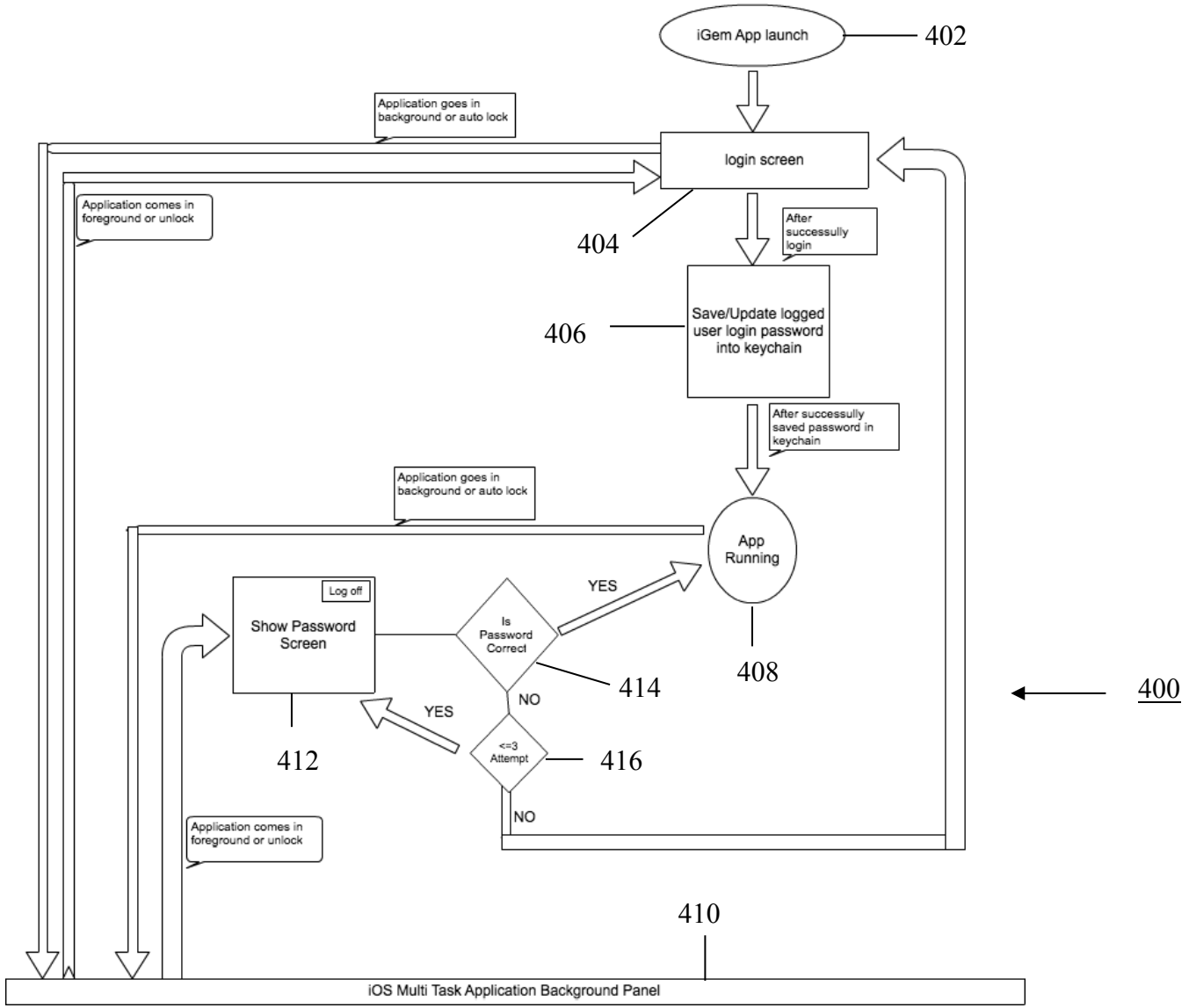
iGem App launch
402
Application goes in background or auto lock
login screen
Application comes in foreground or unlock
404
After successully login
Save/Update logged user login password into keychain
406
After successully saved password in keychain
Application goes in background or auto lock
App Running
408
Log off
Show Password Screen
412
Is Password Correct
YES
NO
414
<=3 Attempt
YES
NO
416
Application comes in foreground or unlock
400
410
iOS Multi Task Application Background Panel

Figure 4