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(71) Applicant (for all designated States except US): **MOTOROLA, INC.** [US/US]; 1303 East Algonquin Road, Schaumburg, IL 60196, docketing.schaumburg@motorola.com (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **S, Ananth** [IN/IN]; #101 Defence Colony 2, Main 3 Cross Indiranagar, Bangalore 560038 (IN). **R, Ramki** [IN/IN]; 86, Gruhalakshmi Layout, I Stg, Bangalore 560079 (IN). **SINHA, Anshuman** [IN/IN]; #66/1, Plot #5 Bagmane Tech Park, C V Raman Nagar, Bangalore 560093 (IN).

(74) Agents: **HAAS, Kenneth, A.** et al.; 1303 East Algonquin Road, Schaumburg, IL 60196 (US).

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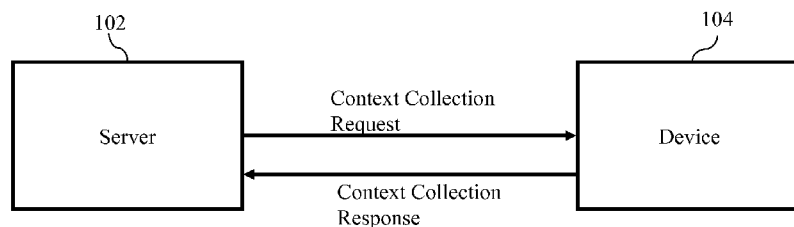


FIG. 1

(57) Abstract: A method and system for collecting new and undefined context from a device is provided. The method includes sending a context collection request generated at a server (102). The request is received at a device (104). The device (104) will determine the definition of the context to be collected, the requirement for context collection and the condition for collecting the context. The device (104) invokes services on itself or on a secondary device on the basis of the definition and condition specified in the context collection request. The requested context is derived based on response from the invoked services. The collected context will be sent to the server (102) as a context collection response.



METHOD AND SYSTEM FOR COLLECTING CONTEXT FROM A DEVICE

The present invention relates, in general, to the field of communications systems, and more specifically, to a method and system for collecting new context from a device. The term “new context” refers to context not part of a fixed pre determined list, support for which is placed in the device at the time of the device’s manufacture.

BACKGROUND OF THE INVENTION

Service providers in many countries enable networks. A network is one in which a particular service provider enables various services to a user. The various services can be cable services, wireless communication services, Internet, IPTV, etc. Services include applications such as an application that makes recommendations of movies.

Today it is becoming increasingly important to provide customized services to end-users. Such customization may be achieved with context of the end-user. With an ever increasing number of services being developed every day, the context that may be required for these services is also growing. Any information which can be used to characterize the situation of any entity is known as context. Information about users is also classified as context. For example, context about an end user could be what he or she is watching on television. A recommendation application, in a communication network, may provide customized recommendations of services on an end-user’s mobile based on this context of the specific end-user namely the programme that the end-user is watching on television. Other examples of context of end-users are web sites browsed by the end-user in the last 24 hours, current status of the end-user and so on.

End and edge devices, by virtue of the applications that run on them, their continued presence in the physical environment of end-user and their growing computing power make them useful sources of end-user context. Examples of end-user context include the environments (e.g. Bluetooth proximity), activities (browsing, listening to music / FM radio), transactions (e-commerce transactions), company (people), etc. of an end user. It follows that a communication service provider can use these devices to obtain information pertaining to end-users in order to customize its services for the individual end-users.

Typically, methods have existed to obtain context from the devices. An example of the said method is an on-line survey, which is a Hyper Text Mark-up Language (HTML) page that users fill up depicting their preferences. This method however, is not practical as users may or may not fill up the form and even after doing so, the information furnished may not be accurate or comprehensive. Another example of the said methods is SNMP which is based on an approach where context can be provided in response to a query of contextual attributes in a fixed pre determined list, support for which is placed in the device at the time of the device's manufacture. It follows that a service provider to which the device is directly connected can query the device. For example, if battery life or signal strength is part of the fixed pre determined list of context in a mobile device, the mobile device can be queried to retrieve this context. However, in order to provide more customized services to a user, a service provider may have to obtain information which is not in the fixed pre determined list of a device connected to the service provider's network. Also, the context required by a service provider may just not be present in such a device on the service provider's network. For example, a mobile service provider, in order to

provide customized recommendations on an end-user's mobile, may want the name of the programme being watched on television by the end-user. This name of the programme may not be in the end-user's mobile either as part of the pre determined list of the mobile or otherwise. In effect, the said methods, do not offer any solution to the problem of collecting context that is new. These methods also do not inform a device how a context available with some other device may be collected. The time of context collection is also not specified in these methods. For example, if the context is to be collected when the user is in his office or home.

In view of the problems mentioned above with collecting context, a method and system is required to collect context, which has not been previously defined and is new to the device. It is also imperative to specify, in the context collection request, the description of context to be collected and means by which the device can collect the desired context. The context collection request should also specify the time at which it is required for the device to collect the context. Further, the request should specify a need and objective of context collection to the user of the device.

BRIEF DESCRIPTION OF FIGURES

The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views, and which, together with the detailed description below, are incorporated in and form part of the specification, serve to further illustrate various embodiments and explain various principles and advantages, all in accordance with the present invention.

FIG. 1 illustrates an exemplary setup for context collection, in accordance with various embodiments of the present invention;

FIG. 2 illustrates a setup for context collection, in accordance with an embodiment of the present invention;

FIG. 3 illustrates a device, in accordance with various embodiments of the present invention;

FIG. 4 illustrates a flowchart of a method for collecting context from a device, in accordance with various embodiments of the present invention; and

FIGs. 5 and 6 illustrate a flowchart of a method for collecting context from a device, in accordance with an embodiment of the present invention.

Skilled artisans will appreciate that elements in the figures are illustrated for simplicity and clarity and have not necessarily been drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated, relative to other elements, to help in improving an understanding of the embodiments of the present invention.

DETAILED DESCRIPTION

Before describing in detail the particular method and system for collecting context from a device, in accordance with various embodiments of the present invention, it should be observed that the present invention resides primarily in combinations of method steps related to collecting context from a device. Accordingly, the apparatus components and method steps have been represented, where appropriate, by

conventional symbols in the drawings, showing only those specific details that are pertinent for an understanding of the present invention, so as not to obscure the disclosure with details that will be readily apparent to those with ordinary skill in the art, having the benefit of the description herein.

In this document, the terms "comprises," "comprising," or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article or apparatus that comprises a list of elements does not include only those elements but may include other elements that are not expressly listed or inherent in such a process, method, article or apparatus. An element preceded by "comprises ... a" does not, without more constraints, preclude the existence of additional identical elements in the process, method, article or apparatus that comprises the element. The term "another," as used in this document, is defined as at least a second or more. The terms "includes" and/or "having," as used herein, are defined as comprising.

A method for collecting a context from a device when a context collection request is received at the device from a server is provided. The method includes determining a definition of the context from the received context collection request. Further, the method includes determining a requirement for collecting the context from the received context collection request. Furthermore, the method includes executing context collection process based on the determined requirement. Further, executing context collection process includes determining, from the received context collection request, a condition for collecting the context. Also, executing context collection process includes determining, from the received context collection request, one or more services to be invoked for context collection. Moreover, executing context

collection process includes invoking the one or more services based on the determined condition. Finally, executing context collection process includes deriving the context from at least one of the invoked one or more services based on the definition of the context, a part of the context collection request and a context known to the device. At last, the method includes sending the derived context to the server.

A system for collection of context is provided. The system includes a server configured to create a context collection request. The server is also configured to send the context collection request to a device. The system also includes a device. The device includes a receiver, a processor and a transmitter. The receiver of the device is configured to receive the context collection request from the server. The processor of the device is configured to determine a definition of a context from the context collection request. Further, the processor is configured to determine a requirement for collecting the context from the context collection request. Also, the processor is configured to execute context collection process on basis of the determined requirement. Furthermore, the processor is configured to determine from the context collection request, one or more services to be invoked for context collection. Moreover, the processor is configured to determine a condition for collection of context. Further, the processor is configured to invoke the one or more services based on the determined condition. Furthermore, the processor is configured to derive the context from at least one of the invoked one or more services based on the definition of the context, a part of the context collection request and a context known to the device. The transmitter of the device is configured to transmit the derived context to the server.

FIG. 1 illustrates an exemplary setup for context collection, in accordance with various embodiments of the invention. **FIG. 1** shows a server **102** and a device **104** interacting with each other in a network. A server **102** is available at the premise of a service provider and facilitates various processes. The server **102** can have multiple functionalities such as maintaining a database of subscribers, call logs, user-specific information, etc. The server **102** can communicate with various devices that are connected to the service provider's network. The server **102** can choose to establish communication with the device for various reasons, such as, for collecting context, for sending a promotional message, for providing a service to users of the device, etc. The server **102** can establish communication with the devices through various protocols. There can be a multitude of devices available over a network which can communicate with the server **102**. The devices can be laptops, personal computers, cell-phones, set-top-boxes, etc. Communication between the server **102** and the device **104** can be established by using various technologies and protocols. Examples of such technologies or protocols can be the Internet, Short Messaging Service (SMS), User Datagram Protocol (UDP), Transmission Control Protocol (TCP), etc. For an embodiment of the invention, the server **102** creates a context collection request for collecting context from the device **104**. The server **102** can send a context collection request to the device **104** to collect context which is new. The server **102** may also choose to collect context which is readily available with the device **104** and is not new. Examples of such pre-programmed contexts can be remaining battery life of the device **104**, network coverage available to the device **104**, etc. The server **102** can request for such context from the device **104** to create a database of user preferences, or to send personalized promotional services to users of the device **104**, etc.

The server **102** can collect various types of context from the device **104**. The context can be channels a user watches on IPTV, the Websites surfed by the user and so on. This contextual information will then be utilized by the server **102** to provide customized services, promotional offers or to create a database pertaining to various users. For an embodiment, the server **102** can pass-on the collected contexts to other entities who can then utilize the context for different purposes. The server **102** can request the device **104** to collect various types of contexts such as television programs that the user frequently watches, names of people who users of the device **104** are in contact with and the frequency of the contact, status of the users of the device **104** as at home, outdoor, etc., specific location of the users of the device **104**, and similar other user or device related information. For collecting context, the server **102** will send a context collection request to the device **104** and the device **104** will send the context back to the server **102** as a context collection response.

The context collection request sent by the server **102** is encoded in a machine understandable language. Examples of machine understandable language can be Extensible Markup Language (XML), etc. The device **104**, in an exemplary embodiment of the invention, is connected to a cellular network. The server **102** sends a context collection request to the device **104**. The context collection request sent by server **102** comprises a definition of the context to be collected. For example, if the service provider wishes to determine the names of the people that users of the device **104** sends an SMS to in a day, the definition of the context will be "names of people messaged in the day". The context collection request will also specify a requirement for collecting the context. The process of context collection will be executed on the basis of this determined requirement. If the user of the device **104**

has set up a list of context which can not be collected, then the context collection request is rejected from the device **104**. The requirement details the need for collecting the context and the end use that the collected context would be put to. The context collection request further comprises a condition for collection of context. The condition provides information pertaining to the time at which the context is to be collected; frequency of context collection; and the duration of validity of the context collection request. The context collection request also provides the device **104** with a method for collecting the requested context. The method for collecting context is specified by the server **102** by including an abstract service description or an exact service instance in the context collection request. A service description provides details of one or more services that need to be invoked to collect the requested context. An abstract service description provides a description of the service from which the requested context can be derived. The exact service instance definitively describes the service which can provide the context requested for. The exact service instance is determined by the device **104** on the basis of the abstract service description. For context collection, the exact service instance can be invoked on the device **104**. The services that need to be invoked in order to derive the context will also be specified in the context collection request. Collection of context can also be achieved by obtaining context from a pre-configured database on the device **104**. For example, the device **104** can be pre-configured to contain information such as name, age, gender of users of the device **104**. This context can be readily collected without invoking any services. In another scenario, the context collection request may include a part of the context to be collected. The requested context can be a combination of a part of the context collection request and a context which is readily available with the

device **104**. An example of a scenario wherein the context collection request comprises a part of the context being requested for can be when the server **102** sends a device **104** a context collection request for the amount of battery time left. The context collection request could state that the "remaining battery time," is derived from the "current battery charge level" and the "type of user." The context collection request could state, in itself, that the "type of user" is frequent. The server **102** could have ascertained the type of user based on past usage of the end-user or subscription plan of the end-user. How the server **102** determines the context provided as part of the context collection request is beyond the scope of this invention. The device **104** extracts various aspects of context collection from the context collection request. The device **104** invokes the services on the basis of the condition and the definition of the context. Thereafter, the device **104** extracts the requested context. The collected context is then sent to the server **102** as a context collection response.

The server **102** can request for context which is either readily available with the device **104** or is new. For new context, the server **102** provides a method to device **104** by which the desired context can be collected. For example, the server **102** may wish to find out the environment that the user of the device is currently in. Environment of the user could refer to whether the user of the device is in a rural or urban neighborhood. For extracting such context, the server **102** sends a context collection request to the device **104** specifying, among other things, a method for determining if the user of the device **104** is in a rural or urban neighborhood. The device **104** decodes the aspects of the request specifying the condition and the services description. The definition of the context collection request, "environment of the user" is determined by the device **104**. The device **104** will also determine the

condition specified in the context collection request which specifies the scenario in which the context is to be collected, the frequency of context collection and duration of validity of the request. The device **104** determines the services to be invoked from the context collection request on the basis of the condition and the service description. The services are invoked by the device **104** at a time specified by the context collection request. The requested context is derived from the invoked services on the basis of the definition of the context. The derived context is then sent back to the server **102** as a context collection response. For an embodiment of the invention, the device **104** can be any device on the network. The device **104** may or may not be owned by an end user or the service provider. The server **102** can request for context from the device **104** which may be a node on the network, for example, a modem or a base transceiver system.

FIG. 2 illustrates a setup for context collection, in accordance with an embodiment of the invention. **FIG. 2** shows the flow of signals when a context collection request is sent to the device **104** from the server **102**. As explained above, the context collection request may request for context that is not necessarily available with the device **104**. In other cases, the requested context may be available readily with the device **104**. In cases when the context is not available with the device **104**, the device **104** will have to extract the context from a secondary device. A secondary device **202** and secondary device **204** in the vicinity of primary device **104** are also shown in **FIG. 2**. Examples of secondary devices can be set-top-boxes connected to an IPTV network, a computer connected to the Internet, etc. The secondary devices are significant in the present application only in the presence of a primary device as they can not collect context directly on a request from a server **102**. For an embodiment of the invention,

a context that is available with a secondary device is extracted by sending a request to the device **104**. When the requested context is not available with the device **104**, then the server **102** will have to specify, in the context collection request, where and how the requested context can be extracted. The context collection request specifies an abstract service description or an exact service instance. A service description details the service which will render the context which is to be collected. An abstract service description provides a description of the service from which the requested context can be derived. The exact service instance definitively describes the service which can provide the context requested for. The exact service instance is determined by the device **104** on the basis of the abstract service description. For better understanding of this concept, let us consider that the requested context is available with the secondary devices **202** or **204**. For an embodiment, the requested context can also be a combination of contexts extracted from the secondary device **202** and the secondary device **204**. Based on the received context collection request, the device **104** invokes one or more services specified in the context collection request on the secondary devices **202** and **204**. The device **104** then extracts the requested context and sends it to the server **102** as a context collection response.

To illustrate the process of collection of context when the requested context is not available with the device **104**, let us consider an example in which the service provider wants to find out the name of the television program that the user of the device **104** is watching. The service provider may wish to have this information to create a database of user preference or to send customized promotional offers to the users based on users' preferences. The server **102** will create a request in a machine understandable language for collecting the name of the program being viewed. The

requested context, in an exemplary embodiment of the invention, is available with the user's set-top-box connected to the IPTV network. For extracting this context, the server **102** will give a definition of the context as "name of program" and specify the condition such as "collect context when user is in the vicinity of the set-top-box" and so on. Further, the context collection request will also specify the requirement or objective of collecting the context. Execution of the context collection process will take place only if context collection is allowed on the basis of the specified requirement. The server **102** will also specify an abstract service description based on which the device **104** will determine that the context being requested for is available with the set-top-box. The device **104** will determine the exact service instance and extract the name of the program. The exact service instance may be identified by a connection string or URL. For example, in an embodiment the exact service instance could be identified by a connection string as per the Bluetooth Object Exchange (OBEX) protocol. The device **104** will extract the specified details from the context collection request and will invoke the services on the set-top-box and extract the name of the program. Collection of the name of program being viewed will occur as defined by the frequency and duration of validity of the request. After extracting the name of the program, the device **104** will send a context collection response to the server **102** containing the name of the program.

FIG. 3 illustrates the device **104** in accordance with various embodiments of the invention. The device **104** comprises a receiver **302**, a processor **304** and a transmitter **306**. The various components of the device **104** facilitate context collection. The receiver **302** is configured to receive a context collection request that is encoded in a machine understandable language by the server **102**. The receiver **302**

will then forward the context collection request to the processor **304** for decoding and extraction of requested context. The processor **304** decodes the context collection request to extract the definition of the requested context, the requirement for context collection and the conditions associated with the context collection request. The processor **304** also determines the service description and the necessary services to be invoked for extracting the requested context. The processor **304** will then invoke the necessary services on the basis of the condition that is determined from the context collection request. The condition specifies the scenario in which the context is to be collected, the frequency with which the context is to be collected and the duration of validity of the request. The processor **304** will invoke one or more services from the device **104** if the requested context is available at the device **104**. If the server **102** has specified the exact service instance and the location of a secondary device from where the context is to be collected then processor **304** will invoke the services on those secondary devices. The processor **304** will then extract the requested context from the invoked services, a part of the context collection request and a context known to the device, on the basis of the definition and condition of the context collection specified in the context collection request. The collected context is sent to server **102** by the transmitter **306** as a context collection response. For an embodiment of the invention, the device **104** can receive multiple context collection requests from the server **102**. For one embodiment the multiple requests will be processed by receiver **302** in the order of their arrival at **104** and will be responded to accordingly. For another embodiment of the invention, the receiver **302** and the transmitter **306** can be parts of the processor **304**. For another embodiment of the

invention, the device **104** can perform the functions of the receiver **402**, the processor **404** and the transmitter **306**.

FIG. 4 illustrates a flowchart of a method for collecting context from a device, in accordance with various embodiments of the present invention. A server **102** in a network can collect context information about the users and their devices by using the method described herein. The information may or may not be readily available with the devices, in which case, the information has to be gathered by using one more communication technologies. The method initiates at step **402**. The server **102** creates a context collection request in a machine understandable language and sends it to the device **104**. At step **404**, the device **104** determines the definition of the context from the received context collection request. At step **406**, the requirement for context collection is determined. The requirement specifies the objective of collecting the context and the end use that the collected context will be put to. The device **104** can have a set of pre-configured rules to decide the context that can be collected from the device **104** and the context collection request to be rejected. Execution of the context collection process will depend upon the requirement. If context collection is allowable on the basis of the determined requirement, then the execution of the context collection process initiates at step **408**. At step **410**, the device **104** determines a condition of the context collection from the context collection request. The condition can comprise a scenario in which the context is to be collected. For example, "collect context when user is in the vicinity of his set-top-box". The condition can also comprise the frequency with which the context is to be collected and the duration for validity of the context collection request. Duration of the validity of the request can specify attributes such as "collect context for one month," "collect

context for a week," etc. At step **412**, one or more services are determined and invoked from the device **104** to collect the context mentioned in the context collection request. The one or more services that are needed to be invoked for collecting the context are specified in the context collection request. The exact service instance is determined on the basis of the abstract service description specified in the context collection request. The exact service instance can be invoked on the device **104**. The services can be invoked on the device **104** or on one or more secondary devices. Secondary devices can be for example, set-top-boxes, personal computers, laptops, etc. The device **104** can communicate with secondary devices through BluetoothTM, infrared, etc. At step **414**, the requested context is derived. The context can be derived from a combination of at least one of the output of the invoked services, a part of the context collection request and a context which is known to the device **104**. Context known to the device **104** is the context which is readily available with the device **104** and no services need to be invoked for extracting the same. Alternatively, the context can also be derived from either the invoked services or a part of the context collection request or a context known to the device. The services are invoked on the basis of the determined condition which specifies the exact time when the context is to be collected and the scenario in which the context is to be collected. Context is derived based on the definition of context extracted from the context collection request. Definition of the context specifies the name of the context which the server **102** wishes to extract. For example, the context collection request can specify the definition of the context to be collected as "name of program being watched on television," or "names of people called in a day," etc. The extracted

context is sent to server **102** as a context collection response at step **416**. The method for collecting context from the device **104** is terminated at step **418**.

FIGs. 5 and 6 illustrate a flowchart of a method for collecting context from a device, in accordance with an embodiment of the present invention. The service provider may want to collect contextual information about the users and their devices. The information gathered can be used in a number of ways by the service provider. The service provider can use the collected information to provide targeted advertisements or customized services to the users of the device based on users' preference or information gathered. The information may or may not be readily available with the devices, in which case, the information has to be gathered by using one more communication technologies. The method initiates at step **502**. For collecting context from a device **104**, the server **102** owned by the service provider creates a context collection request and encodes it in a machine understandable language. At step **504**, the machine understandable context collection request is sent from server **102** to the device **104**. For an embodiment of the invention, the context collection request can be sent to the device **104** over HTTP. At step **506**, the device **104** receives the context collection request from the server **102**. For an embodiment, the context collection request is received by the receiver **302** of the device **104**. Thereafter, at step **508**, the device **104** determines the definition of context from the context collection request. The definition of the context provides the name of the requested context. For example, the name of the program that the users of the device **104** are watching, or names of the people to whom the user has sent messages with more than 20 characters, etc. For an embodiment, the definition of the context can be determined by the processor **304** of the device **104**. At step **510**, the device **104** further

determines the requirement of collecting the context from the context collection request. For an embodiment, the processor **304** of the device **104** can determine the requirement specified in the context collection request. Further, the processor **304** determines whether the execution of the context collection request is allowable based on requirement specified in the context collection request. If the context collection process is allowed, then, at step **512**, the context collection process is executed. There can be cases when the context collection request is not allowable. An example of such a case can be the context collection request requesting context that the user of device **104** believes compromises their privacy. The users or administrator of the device **104** can pre-program their devices to restrict certain context collection requests. Similarly, users can define a list of rules for which the context collection requests will be allowed. If a request for collecting context is not allowed by the user then the context collection request will not be executed on the device **104**. At step **514**, a condition for context collection is determined by the device **104**. The condition can comprise a scenario for context collection, frequency for context collection and duration of validity for context collection. The condition may comprise one or all of these parameters. Scenario for context collection may describe additional information or parameters that are applicable to the requested context. An example of such a scenario can be collecting context when user has been watching a program for more than five minutes or when a user has been browsing a site on the Internet for at least more than ten minutes, etc. Frequency of context collection can specify attributes such as "collect context after every two hours," "collect context on a weekly basis at 7:00 PM every Friday," etc. Duration of validity of the context collection request, as the name suggests, will specify a timeline for the context collection request. For

example, the duration of validity of the context collection request can specify “stop collecting context after a fortnight”.

At step **516**, the device **104** determines one or more services that are to be invoked from the context collection request. The one or more services to be invoked describe the method for collecting the context to the device **104**. The services are invoked on the basis of the service description specified in the context collection request. The one or more services to be invoked are invoked on device **104** if the requested context is available with the device. Otherwise, the services are invoked on a secondary device that possesses the requested context. The secondary device and the one or more services that are to be invoked on the secondary device are determined from the abstract service description provided in the context collection request. For extracting context from a secondary device, the device **104** will determine the exact service instance and invoke the services on the secondary device. For context such as "name of program" the device **104** can collect the context from a set-top-box which possesses the requested context. The exact service instance can be determined by the device **104** on the basis of the abstract service description specified in the context collection request. At step **518**, the requested context is derived. The context may be derived from the invoked services, a part of the context collection request, or a context known to the device **104**. For an embodiment, the derived context can be a combination of all the three sources mentioned or any other combination of the sources. The requested context is extracted at step **520**. Context may be extracted from the device **104** or from a secondary device. At step **522**, the collected context is transmitted to server **102** as a context collection response by a transmitter **306** at the device **104**. The method of context collection terminates at step **524**.

The method and a system for context collection from a device as presented here has a number of advantages. It enables collection of new and previously undefined context. The invention provides a comprehensive method of context collection over the existing methods. Further, the method and system described enables service providers to collect context that previously could not have been collected. The context collection request that service providers can create using the invention is declarative in nature. The request specifies "what," "when," "why," and "how" to collect context in a serializable manner. The invention can be used to collect context from multiple devices which may or may not be in direct communication with a service provider. The context, thus collected, can be used in a variety of ways by the service provider. These will typically include offering promotional services to the users based on users' preferences.

It will be appreciated that the method and system for collecting context from a device, described herein, may comprise one or more conventional processors and unique stored program instructions that control the one or more processors, to implement, in conjunction with certain non-processor circuits, some, most, or all of the functions of the system described herein. The non-processor circuits may include, but are not limited to, signal drivers, clock circuits, power-source circuits, and user-input devices. As such, these functions may be interpreted as steps of the method and system for managing transmissions in the wireless communication network. Alternatively, some or all the functions can be implemented by a state machine that has no stored program instructions, or in one or more application-specific integrated circuits (ASICs), in which each function, or some combinations of certain of the functions, are implemented as custom logic. Of course, a combination of the two approaches can

also be used. Thus, methods and means for these functions have been described herein.

It is expected that one with ordinary skill, notwithstanding possibly significant effort and many design choices motivated by, for example, available time, current technology and economic considerations, when guided by the concepts and principles disclosed herein, will be readily capable of generating such software instructions, programs and ICs with minimal experimentation.

In the foregoing specification, the invention and its benefits and advantages have been described with reference to specific embodiments. However, one with ordinary skill in the art would appreciate that various modifications and changes can be made, without departing from the scope of the present invention, as set forth in the claims below. Accordingly, the specification and the figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of the present invention. The benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage or solution to occur or become more pronounced are not to be construed as critical, required or essential features or elements of any or all the claims. The invention is defined solely by the appended claims, including any amendments made during the pendency of this application, and all equivalents of those claims, as issued.

WE CLAIM :

1. A method for collecting a context from a device when a context collection request is received at the device from a server, the method at the device comprising:
 - determining a definition of the context from the received context collection request;
 - determining a requirement for collecting the context from the received context collection request;
 - executing context collection process based on the determined requirement, wherein executing context collection process comprises:
 - determining from the received context collection request, a condition for collecting the context;
 - determining from the received context collection request, one or more services to be invoked for context collection;
 - invoking the one or more services based on the determined condition; and
 - deriving the context from at least one of the invoked one or more services based on the definition of the context, a part of the context collection request and a context known to the device; and
 - sending the derived context to the server.
2. The method as recited in claim 1, wherein the one or more services are invoked on the device.

3. The method as recited in claim 1, wherein the one or more services are invoked on one or more secondary devices.
4. The method as recited in claim 1, wherein the condition comprises at least one of a scenario for collection of context, a frequency for collection of context and a duration of validity for collection of context.
5. The method as recited in claim 1, wherein the context collection request is encoded in a machine understandable language by the server.
6. A system for collection of context, the system comprising:
 - a server configured to:
 - create a context collection request; and
 - send the context collection request to a device; and
 - the device comprising:
 - a receiver configured to receive the context collection request from the server;
 - a processor configured to:
 - determine a definition of a context from the context collection request;
 - determine a requirement for collecting the context from the context collection request;
 - execute context collection process on basis of the determined requirement;

determine from the context collection request, one or more services to be invoked for context collection;

determine a condition for collection of context;

invoke the one or more services based on the determined condition; and

derive the context from at least one of the invoked one or more services based on the definition of the context, a part of the context collection request and a context known to the device; and

a transmitter configured to transmit the derived context to the server.

7. The system as recited in claim 6, wherein the server is further configured to encode the context collection request in a machine understandable language.
8. The system as recited in claim 6, wherein the processor is further configured to determine from the condition at least one of a scenario for collecting the requested context, a frequency for collection of context and a duration of validity for collection of context.
9. The system as recited in claim 6, wherein the processor invokes the one or more services on the device.
10. The system as recited in claim 6, wherein the processor invokes the one or more services on one or more secondary device.

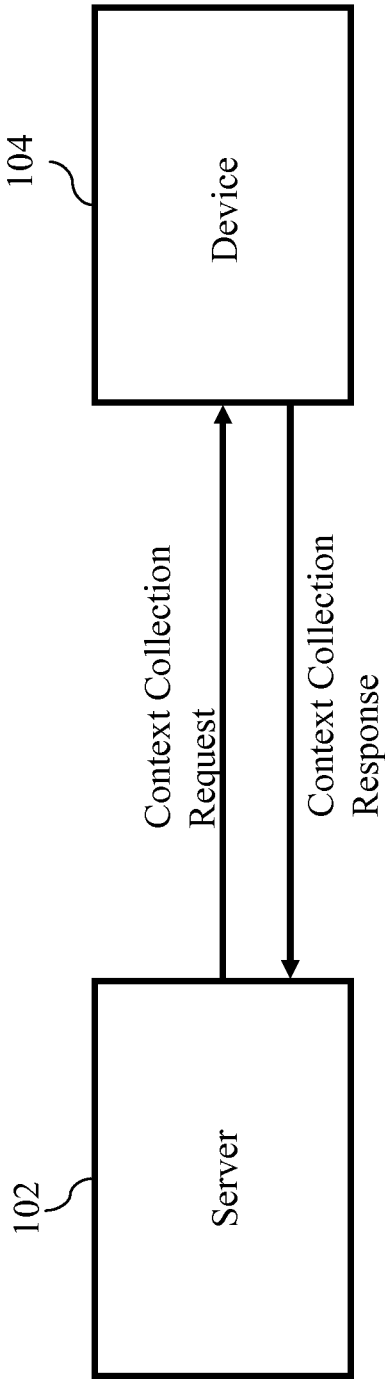


FIG. 1

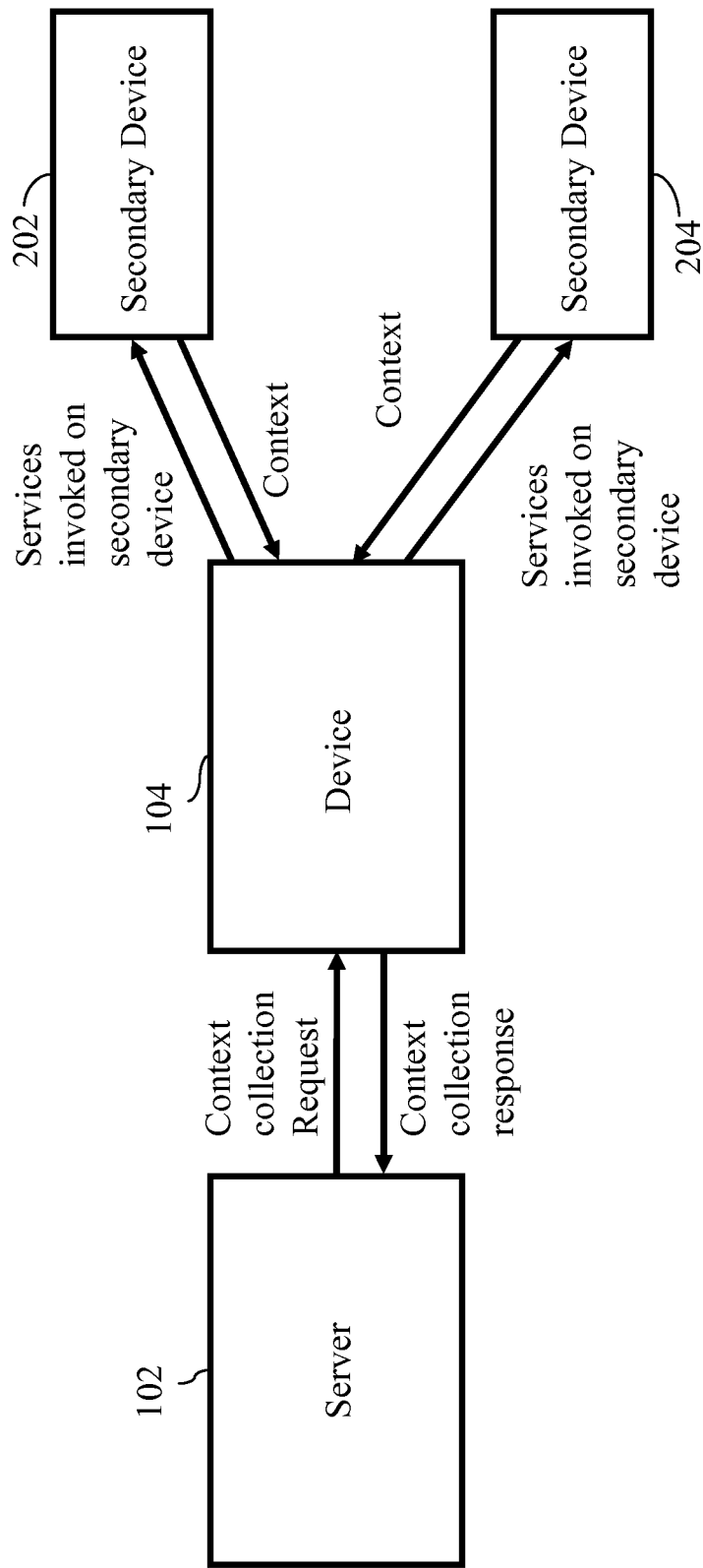


FIG. 2

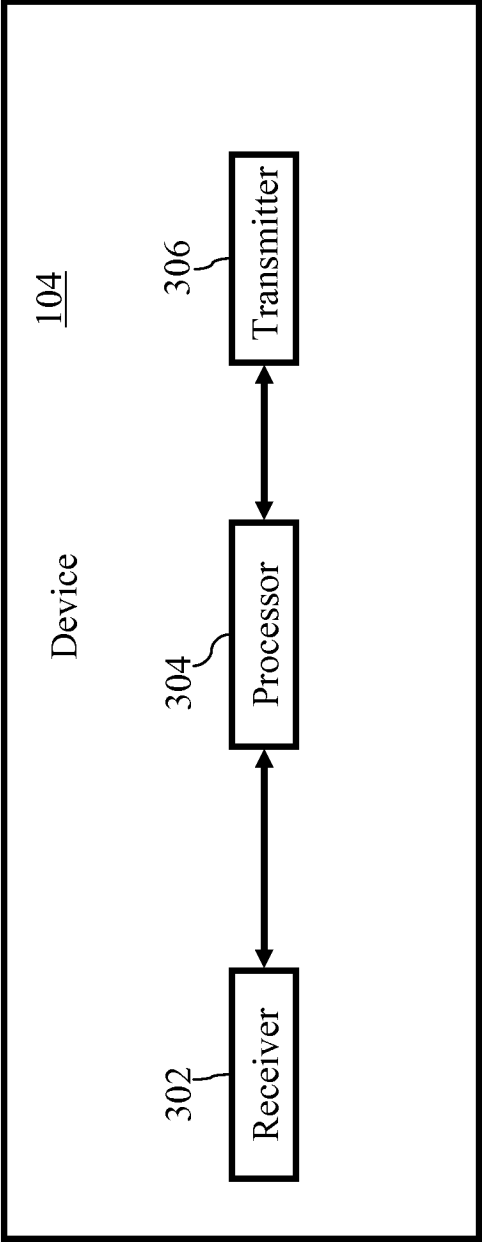


FIG. 3

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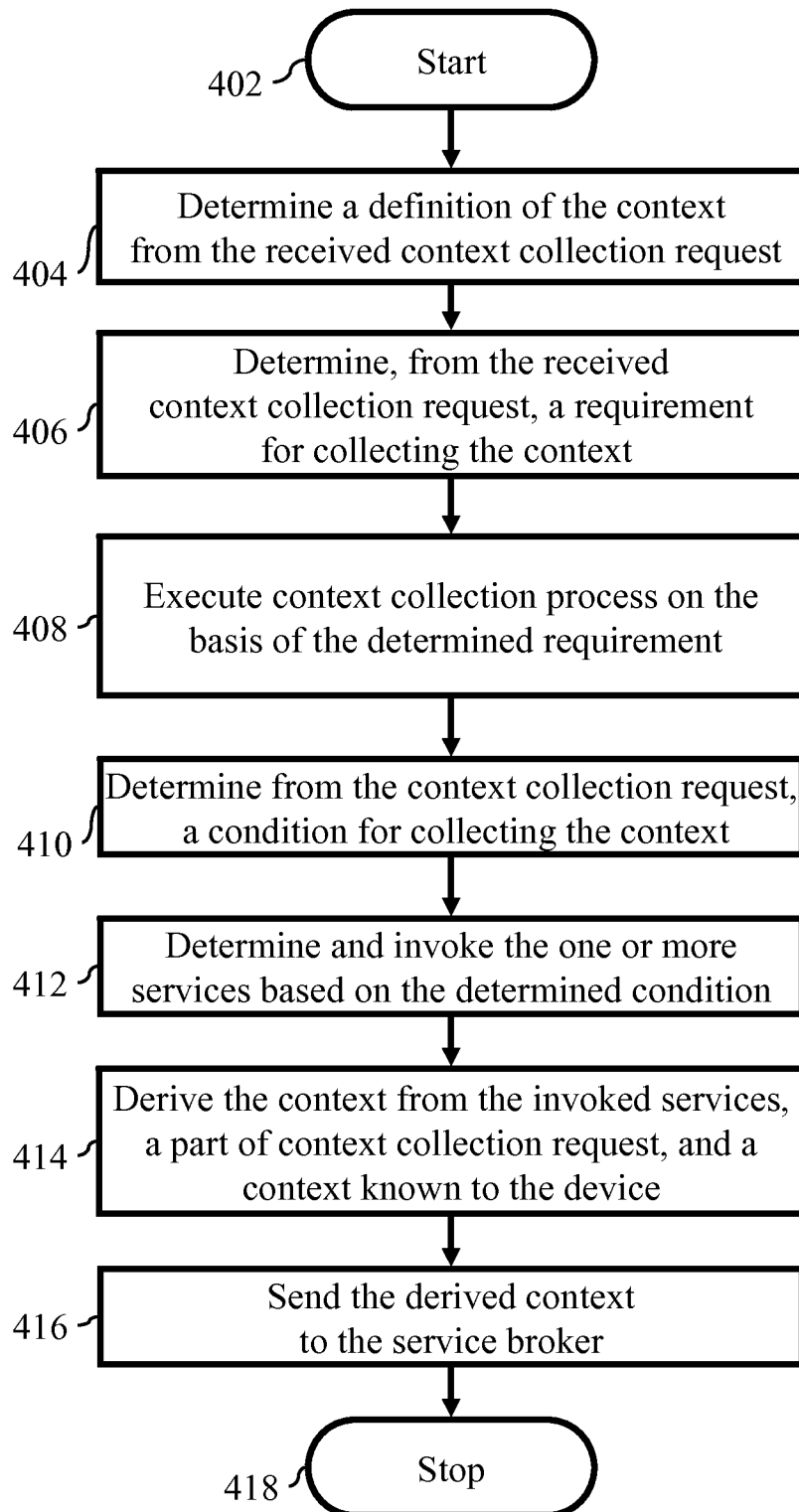


FIG. 4

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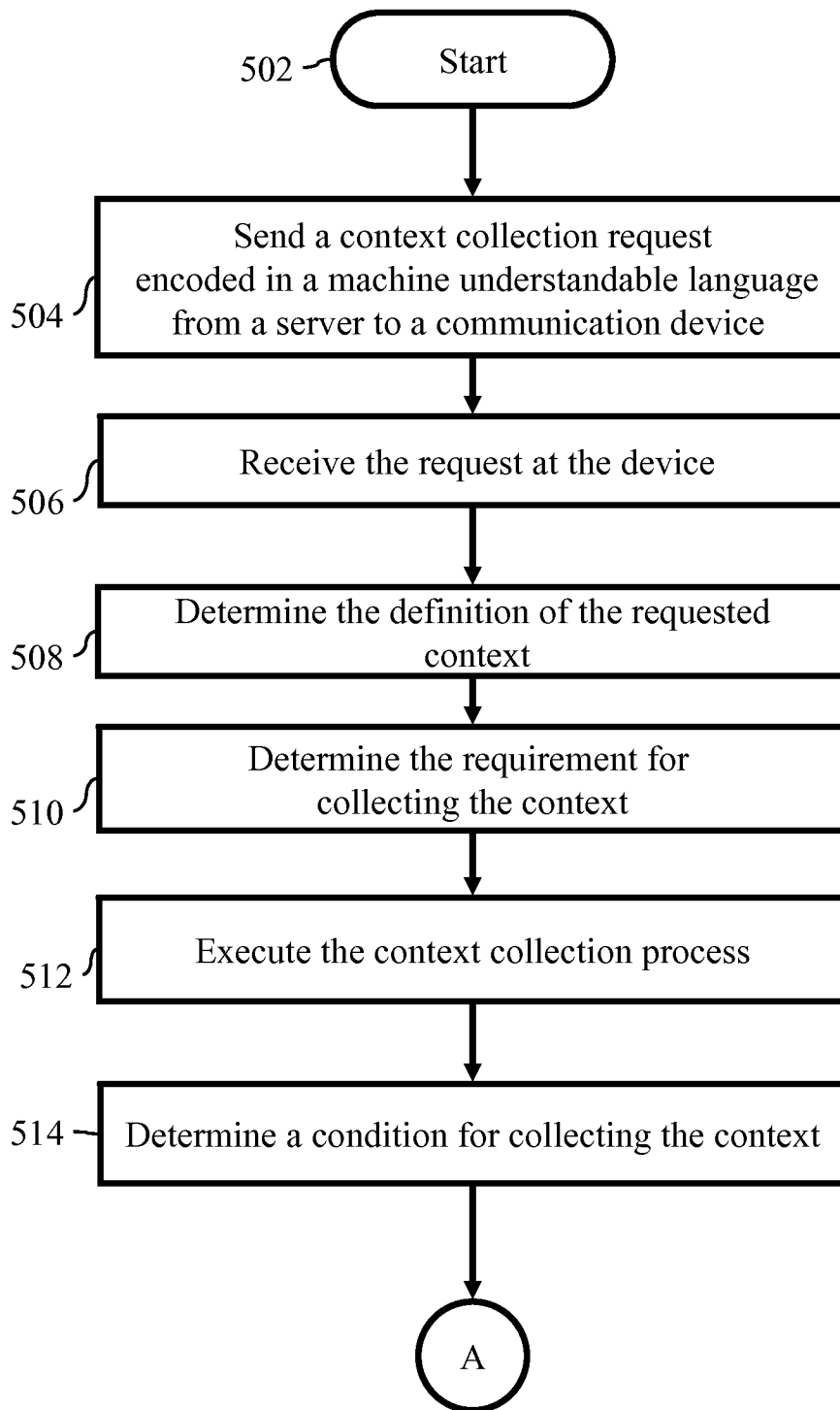


FIG. 5

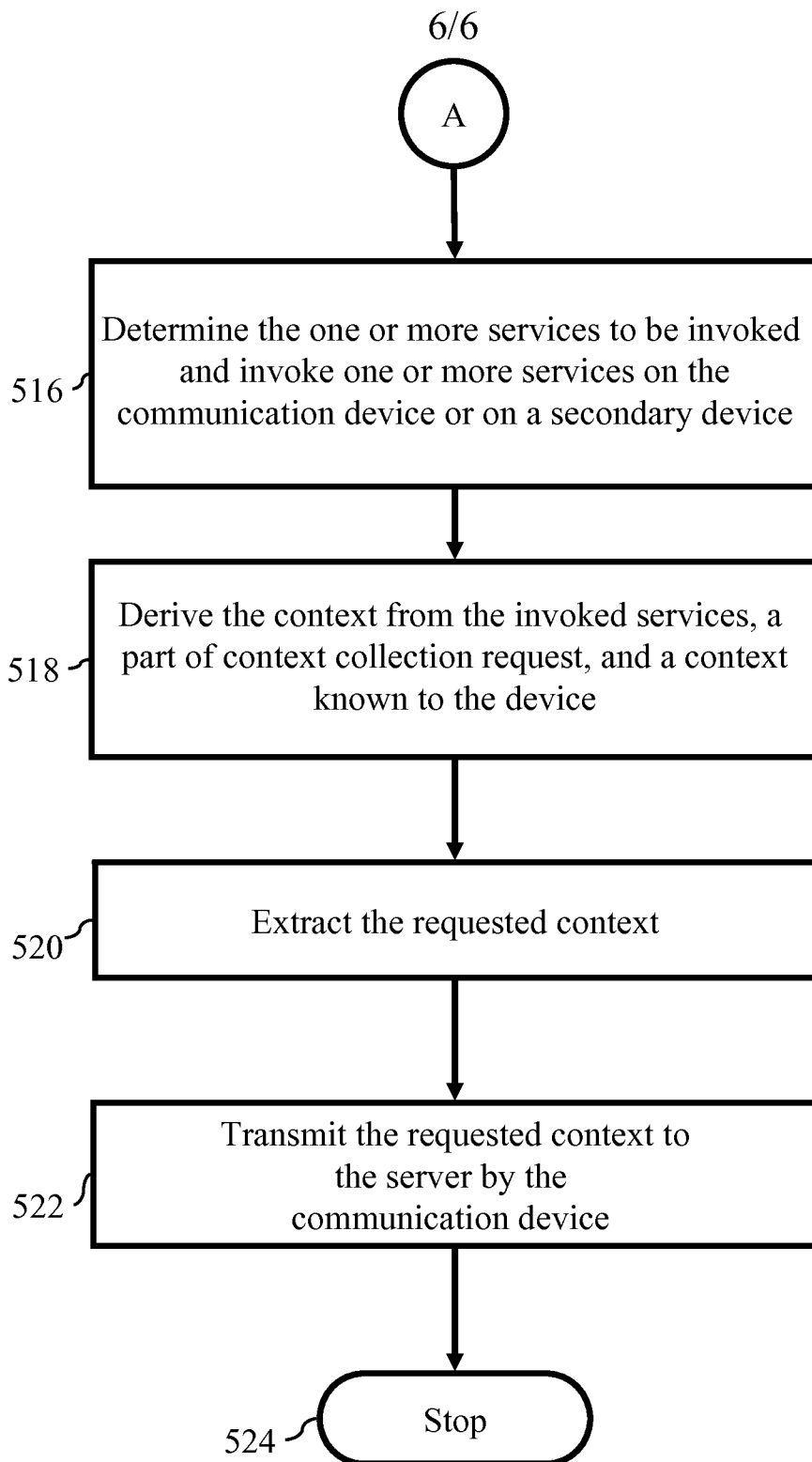


FIG. 6