

any other medium which can be used to store the desired information and which can be accessed by the computer 500.

[0046] According to various embodiments, the computer 500 may operate in a networked environment using logical connections to remote computers through a network such as the network 520. The computer 500 may connect to the network 520 through a network interface unit 506 connected to the bus 504. It should be appreciated that the network interface unit 506 may also be utilized to connect to other types of networks and remote computer systems. The computer 500 may also include an input/output controller 512 for receiving and processing input from a number of other devices, including a keyboard, mouse, or electronic stylus (not shown in FIG. 5). Similarly, an input/output controller may provide output to a display screen, a printer, or other type of output device (also not shown in FIG. 5).

[0047] As mentioned briefly above, a number of program modules and data files may be stored in the mass storage device 510 and RAM 514 of the computer 500, including an operating system 518 suitable for controlling the operation of a networked desktop, laptop, or server computer. The mass storage device 510 and RAM 514 may also store one or more program modules. In particular, the mass storage device 510 and the RAM 514 may store the application 102, the re-usable software component 104, and the knowledge elements 106, each of which was described in detail above with respect to FIGS. 1-4. The mass storage device 510 and the RAM 514 may also store other types of program modules.

[0048] Based on the foregoing, it should be appreciated that technologies for providing, discovering, and integrating self-describing re-usable software components are provided herein. Although the subject matter presented herein has been described in language specific to computer structural features, methodological acts, and computer readable media, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features, acts, or media described herein. Rather, the specific features, acts and mediums are disclosed as example forms of implementing the claims.

[0049] The subject matter described above is provided by way of illustration only and should not be construed as limiting. Various modifications and changes may be made to the subject matter described herein without following the example embodiments and applications illustrated and described, and without departing from the true spirit and scope of the present invention, which is set forth in the following claims.

What is claimed is:

1. A method for re-using a software component, the method comprising:

publishing metadata for use in conjunction with a re-usable software component, the metadata identifying one or more capabilities of the re-usable software component, identifying one or more other software components with which the re-usable software component can be integrated, and identifying one or more mechanisms for integrating the re-usable software component with the one or more other software components; and

integrating the re-usable software component and the one or more other software components based upon the metadata.

2. The method of claim 1, wherein the metadata identifying one or more mechanisms for integrating the re-usable software component with the one or more other software com-

ponents comprises metadata identifying one or more transformations for integrating the re-usable software component with the one or more other software components.

3. The method of claim 1, wherein the metadata further identifies whether the one or more mechanisms for integrating the re-usable software component with the one or more other software components are scoped to one or more of the capabilities.

4. The method of claim 1, wherein the metadata further identifies whether the one or more capabilities of the re-usable software component are scoped to the one or more other software components with which the re-usable software component can be integrated.

5. The method of claim 1, further comprising:

receiving additional metadata from a user for use in conjunction with the re-usable software component, the additional metadata indicating whether the one or more mechanisms for integrating the re-usable software component with the one or more other software components were useful for an actual integration between the re-usable software component and the one or more other software components.

6. The method of claim 1, further comprising:

receiving additional metadata from a user for use in conjunction with the re-usable software component, the additional metadata identifying a popularity value for the re-usable software component.

7. A method for re-using a software component, the method comprising:

specifying capability metadata for a re-usable software component, the capability metadata defining one or more capabilities of the re-usable software component;

specifying affinity metadata for the re-usable software component, the affinity metadata identifying one or more data entities that the re-usable software component operates upon;

specifying derivation metadata for the re-usable software component, the derivation metadata indicating whether the one or more data entities may be inherited;

specifying transformation metadata for the re-usable software component, the transformation metadata identifying one or more mechanisms for integrating the re-usable software component with one or more other software components; and

utilizing the capability metadata, the affinity metadata, the derivation metadata, and the transformation metadata to integrate the re-usable software component and the one or more other software components.

8. The method of claim 7, wherein the derivation metadata indicates whether the one or more data entities is the equivalent or replacement for another externally described data entity.

9. The method of claim 8, wherein the derivation metadata further indicates whether a union operation is to be performed upon the one or more data entities and an externally described data entity for one or more of the capabilities.

10. The method of claim 9, wherein the transformation metadata specifies one or more transformations for performing the union operation.

11. The method of claim 7, wherein the derivation metadata further indicates whether a merge operation is to be performed on the one or more data entities and an externally described data entity for one or more of the capabilities.