

in a container that may include one or more other attributes and wherein the central processing unit determines a logical distance the semantic objects are away from the formula attribute by:

- performing an expanding ring search for all attributes 5 included in the expression property of the formula by:
 - creating a first list of attributes that are included in the formula attribute's container;
 - analyzing each attribute in the list to determine if it 10 matches the attribute in the expression property, wherein each element in the list is determined to be the same logical distance away from the formula attribute.

27. The computer system of claim 25, wherein the attributes include parent type and subtype attributes and wherein the central processing unit is programmed to perform an expanding ring search further by determining whether an attribute in the list is a parent type and, if so, adding all the attributes included in a semantic object 15

referenced by the parent type attribute to the first list of attributes to be searched.

28. The computer system of claim 27, wherein the central processing unit is programmed to perform the expanding ring search by determining whether an attribute in the list is a subtype attribute and, if so, adding any attributes included in a semantic object referenced by the subtype attribute to a next list of attributes to be searched, wherein the next list is determined to be at a farther logical distance away than attributes in the first list.

29. The computer system of claim 25, wherein the central processing unit is programmed to perform the expanding ring search by determining whether an attribute in the first list is an object link attribute and, if so, adding any attributes included in a corresponding semantic object referenced by the object link attribute to a next list of attributes to be searched, wherein the next list is determined to be at a farther logical distance away than attributes in the first list.

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