

# Exhibit C

(12) **United States Patent**  
**Hinton et al.**

(10) **Patent No.:** **US 7,631,346 B2**  
(45) **Date of Patent:** **Dec. 8, 2009**

(54) **METHOD AND SYSTEM FOR A RUNTIME USER ACCOUNT CREATION OPERATION WITHIN A SINGLE-SIGN-ON PROCESS IN A FEDERATED COMPUTING ENVIRONMENT**

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(Continued)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 827 days.

Gross, T.; Security analysis of the SAML single sign-on browser/artifact profile; Publication Date: Dec. 8-12, 2003; IBM Zurich Res. Lab; On pp. 298-307.\*

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(65) **Prior Publication Data**  
US 2006/0236382 A1 Oct. 19, 2006

(57) **ABSTRACT**

(51) **Int. Cl.**  
**G06F 7/04** (2006.01)  
**G06F 15/16** (2006.01)  
**G04L 9/32** (2006.01)  
**G06F 17/30** (2006.01)

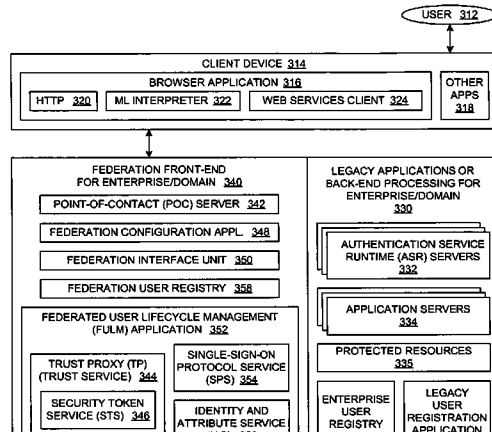
A method, system, apparatus, and computer program product are presented to support computing systems of different enterprises that interact within a federated computing environment. Federated single-sign-on operations can be initiated at the computing systems of federation partners on behalf of a user even though the user has not established a user account at a federation partner prior to the initiation of the single-sign-on operation. For example, an identity provider can initiate a single-sign-on operation at a service provider while attempting to obtain access to a controlled resource on behalf of a user. When the service provider recognizes that it does not have a linked user account for the user that allows for a single-sign-on operation with the identity provider, the service provider creates a local user account. The service provider can also pull user attributes from the identity provider as necessary to perform the user account creation operation.

(52) **U.S. Cl.** ..... **726/8**; 380/279  
(58) **Field of Classification Search** ..... 726/6, 726/5, 4, 8; 709/223, 229, 219; 713/202, 713/186, 169; 380/279; 715/500  
See application file for complete search history.

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**20 Claims, 14 Drawing Sheets**



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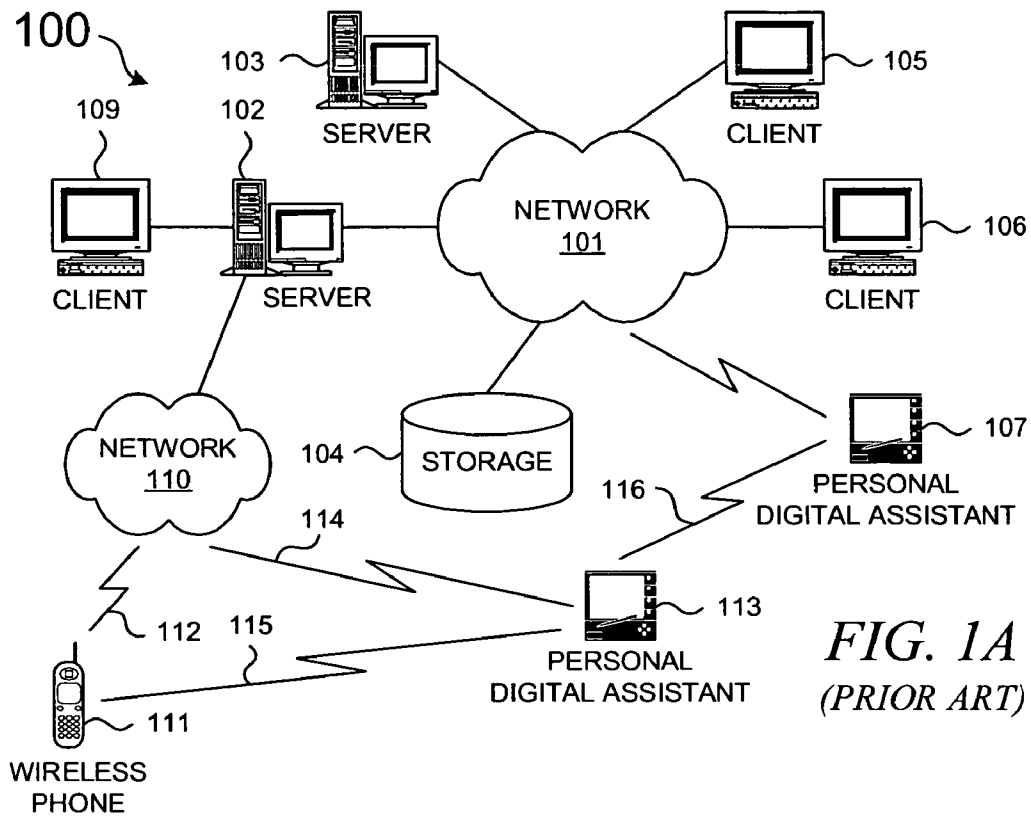


FIG. 1A  
(PRIOR ART)

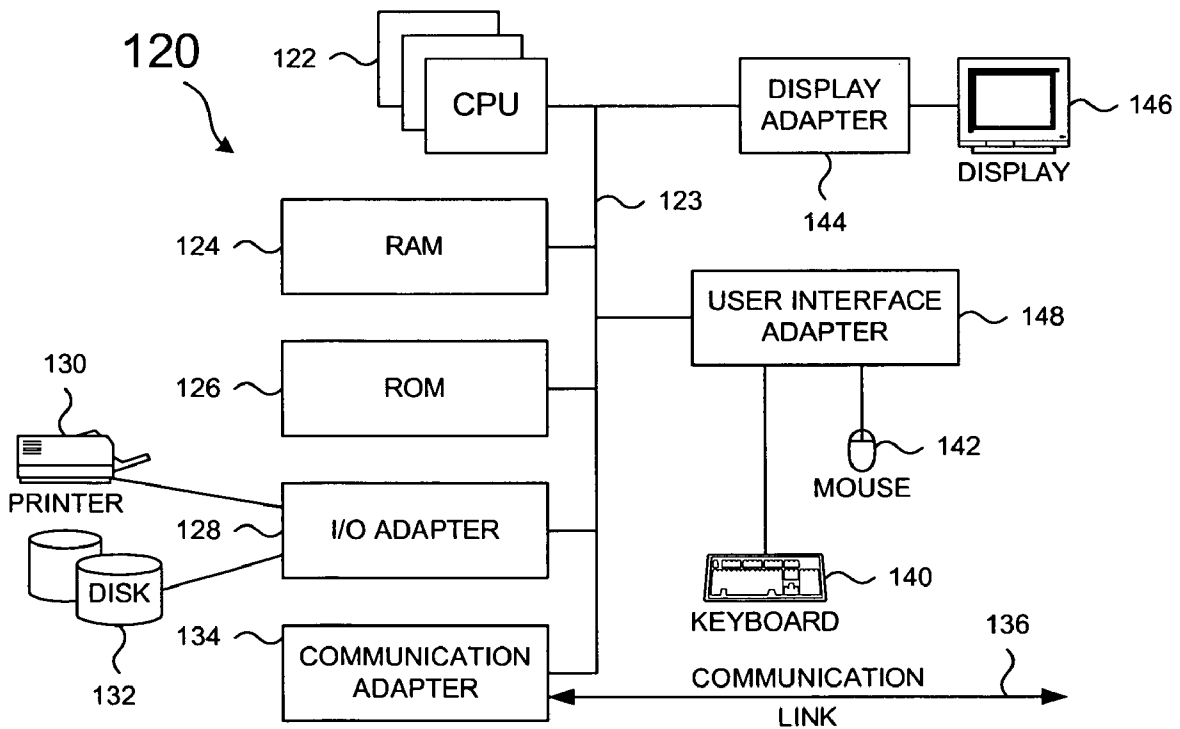
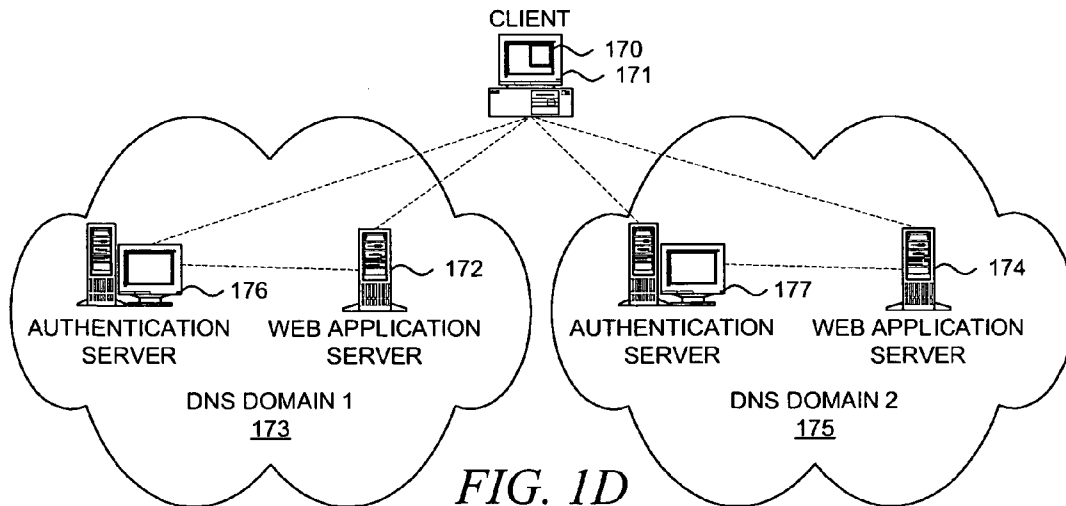
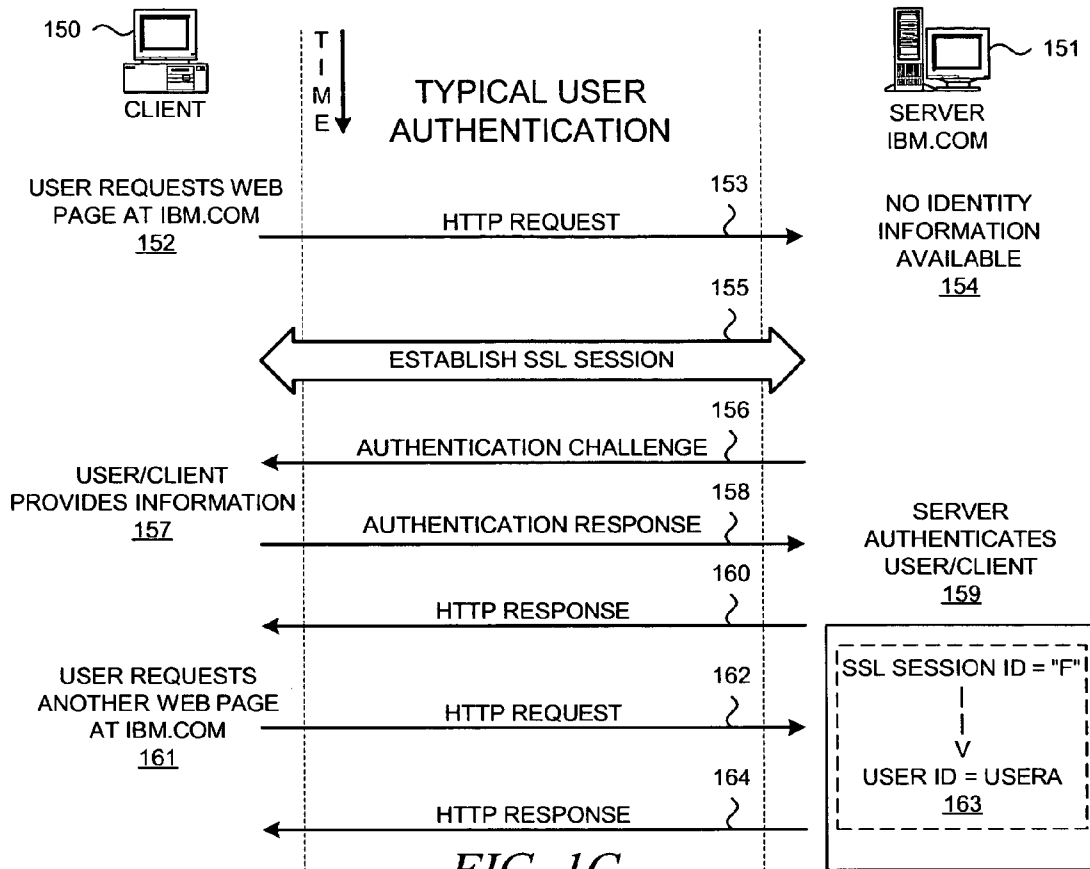


FIG. 1B  
(PRIOR ART)



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