

Electronic Commerce Interoperability Standard

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ECIS stands for E-Commerce Interoperability Standard. an interoperability standard between service providers in decentralized web environment

Why ECIS is required?

- no standard method to exchange data between multiple service providers on the web
- no standard framework to exchange data between multiple service providers on the web
- because of above absent, current E-Commerce interoperation need complex integration and more resources.
- when user access shopping service provider(merchant)
 - merchant provide their service on their own way
 - merchant integrate their backend service providers internally
 - no standard to inter-operate/exchange services between multiple providers.
- a new standard is required
 - de-centralized
 - interoperable
 - between multiple service providers including payment and identity service providers.

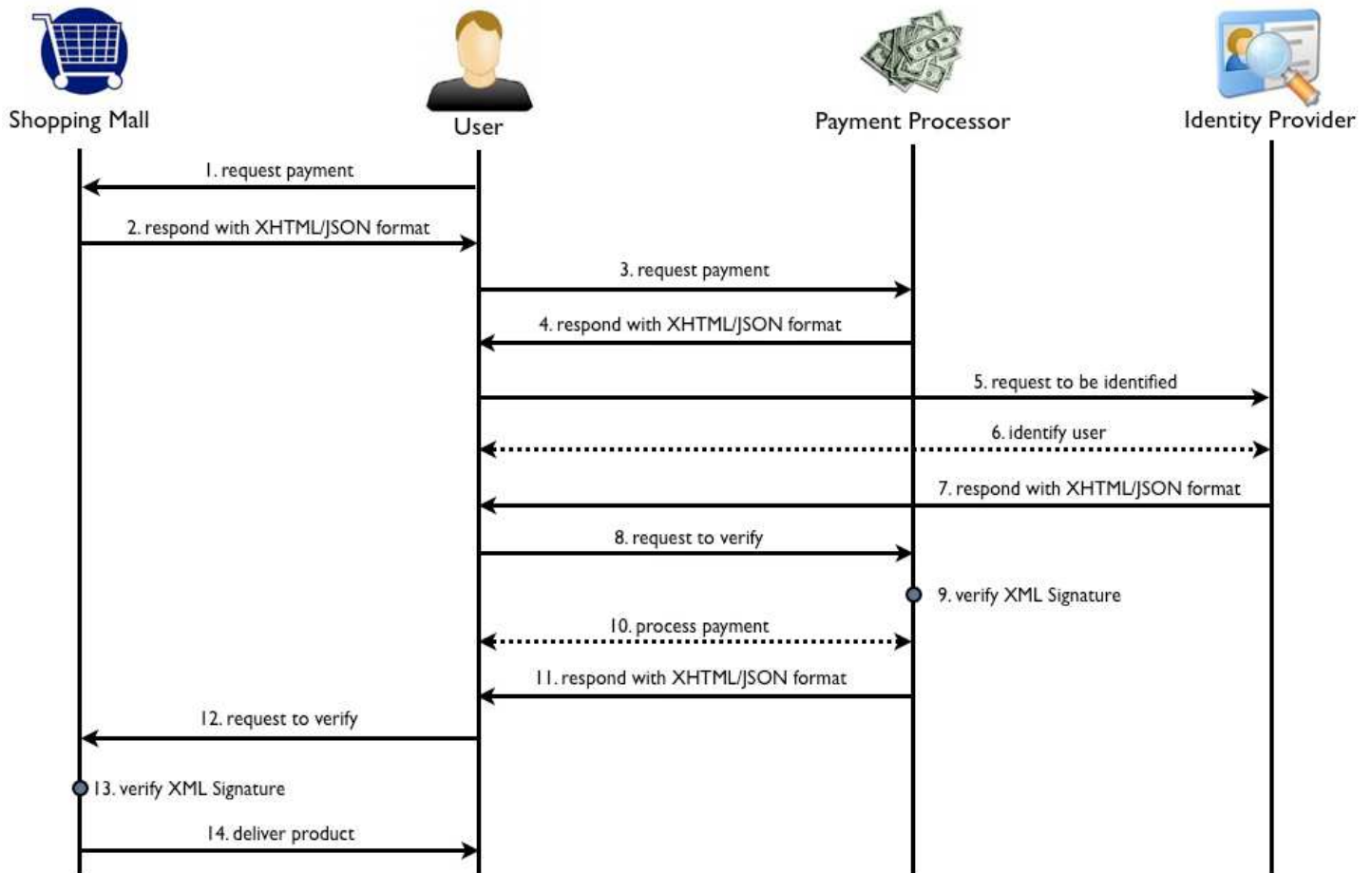
Data Formats for ECIS

- JSON Web Token
- IETF ECML

Exchanging mechanisms

- SAML
- OpenID
- OAuth

ECIS Sequence Diagram



1. User(UA) send request payment to Shopping Mall

2. shopping mall response request-token as XHTML/JSON format
 - the request-token can be signed by merchant
 - the token data can be formatted by ECML or JSON Web Token or others
3. UA redirect the request-token to Payment Processor
4. Payment processor response request-token to UA
 - Payment processor need to identity user but they are unable to identity user.
5. UA redirect the request-token of payment processor to Identity Provider
6. Identity Provider identify user
 - depends on ID providers
7. Identity Provider response result as XHTML or JSON format
 - the result can be signed by Identity Provider
8. UA redirect the result to Payment Processor
9. Payment Processor verify the result
 - normally XML Signature verification can be used
10. Payment Processor process payment with User
11. Payment Processor response payment result
 - the result can be signed by payment processor
 - the formats can be XHTML or JSON
12. UA redirect the result to Shopping Mall
13. Shopping Mall verify the result sent from Payment Processor
14. Shopping Mall deliver product/service to User

Decentralized by Centralized

- between multiple service providers, the mechanism is de-centralized
- but it is User Centralized

Considerations

- Timeouts
 - Shopping Mall can not wait too much time
 - but user know what is under processing
- Trust-Anchor between service providers
 - Trust Each Other
 - Use PKI

References

- ECML : <http://tools.ietf.org/html/rfc4112>
- SAML : <http://en.wikipedia.org/wiki/SAML>
- XML Encryption : http://en.wikipedia.org/wiki/XML_Encryption

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- This page was last modified on 17 October 2013, at 17:08.
 - This page has been accessed 427 times.