UMA for SDS

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tinyurl.com/umawg

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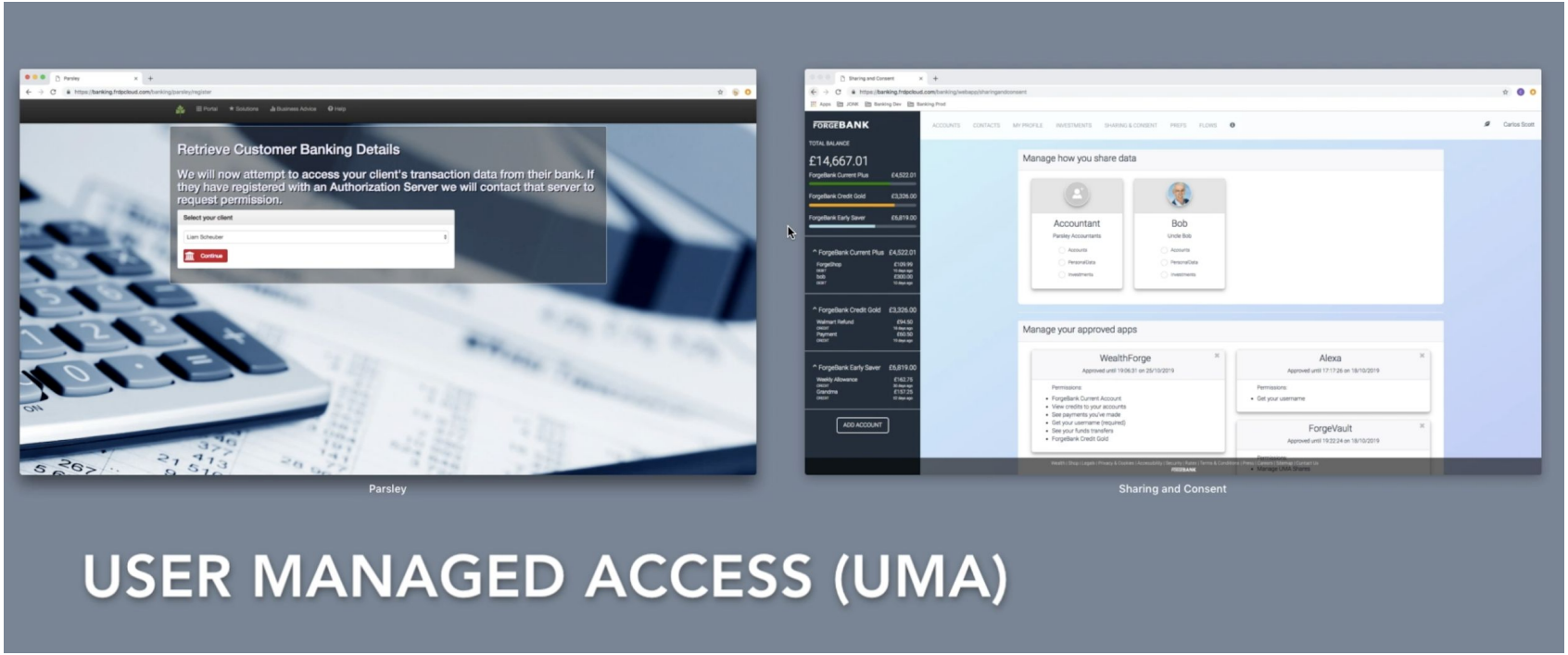
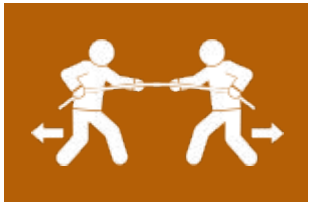
UMA Demo


Retrieve Customer Banking Details
We will now attempt to access your client's transaction data from their bank. If they have registered with an Authorization Server we will contact that server to request permission.
Select your client
Liam Scheuber
Continue
Parsley
FORGEBANK
TOTAL BALANCE
£14,667.01
Manage how you share data
Accountant
Bob
Manage your approved apps
WealthForge
Alexa
ForgeVault
ADD ACCOUNT
Sharing and Consent
USER MANAGED ACCESS (UMA)

UMA and Consent

Consent (and consent to contract) legally require **Manifestation**, **Knowledge**, and **Voluntariness** – more often honored in the breach

Cookie consent
App permissions
Marketing preferences
Third-party permissions
ToS agreements



Digital consent has serious practical challenges achieving revocability, contract meeting of the minds, choice in relationship building, and consent seeker good faith

UMA enables permissioning that is **asynchronous**

Share with parties, with groups, by relationship
Respond to pending requests
Monitor all current shares across sources
Modify one or more shares
(Respond to request at run time à la consent)

It is a technology that can enable **right-to-use licensing** within a Me2B framework of mutual agency and value exchange

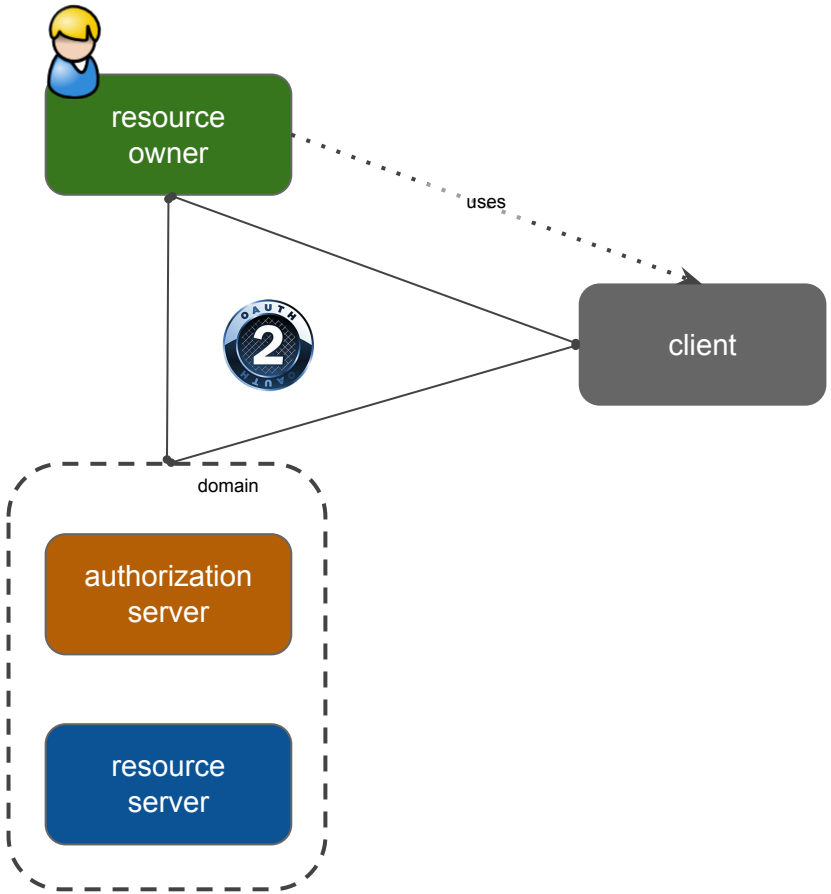
L. LeVasseur and E. Maler, "Beyond Consent: A Right-to-Use License for Mutual Agency," in IEEE Communications Standards Magazine, vol. 3, no. 4, pp. 52-59, December 2019, doi: 10.1109/MCOMSTD.001.1900031.

OAuth and UMA

“ALICE-TO-SELF” SHARING

OAuth enables **constrained delegation** of access to **apps** on request

Alice can **agree** to app connections and also **revoke** them

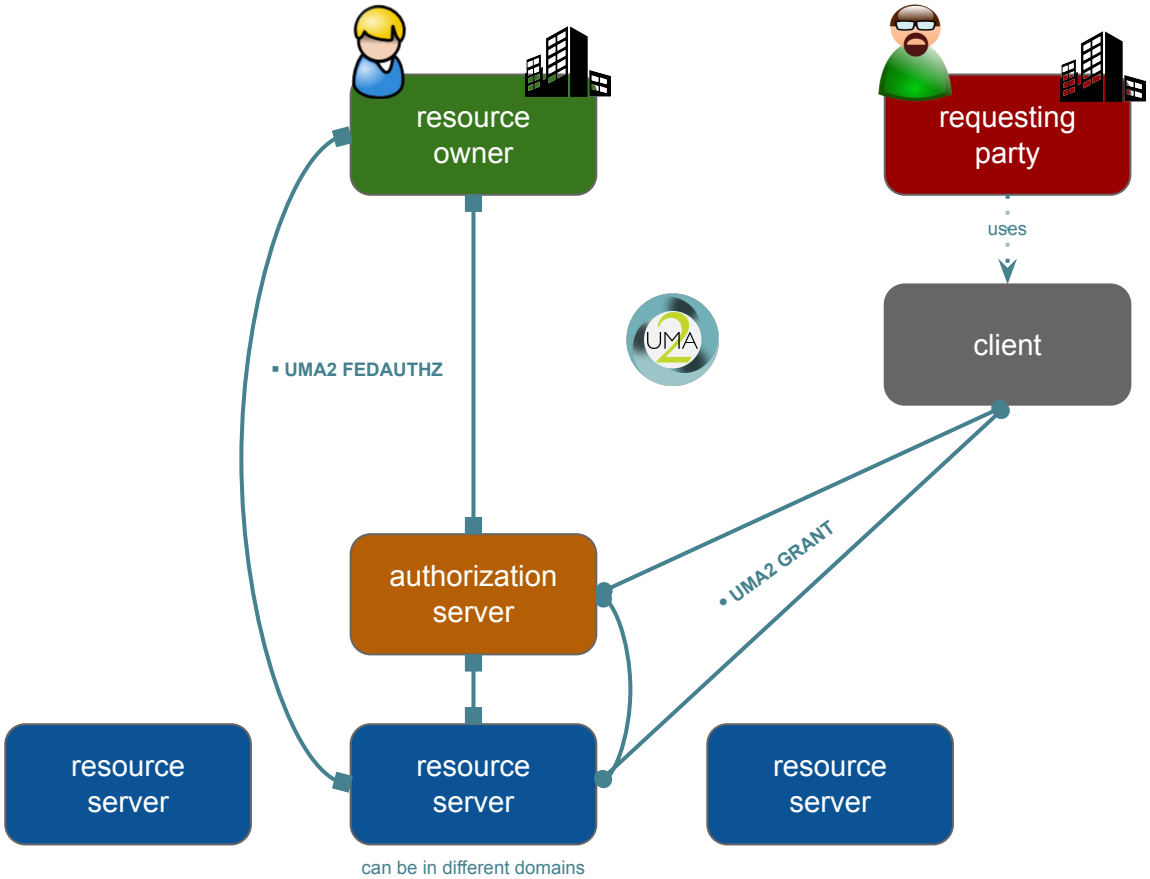


OAuth and UMA

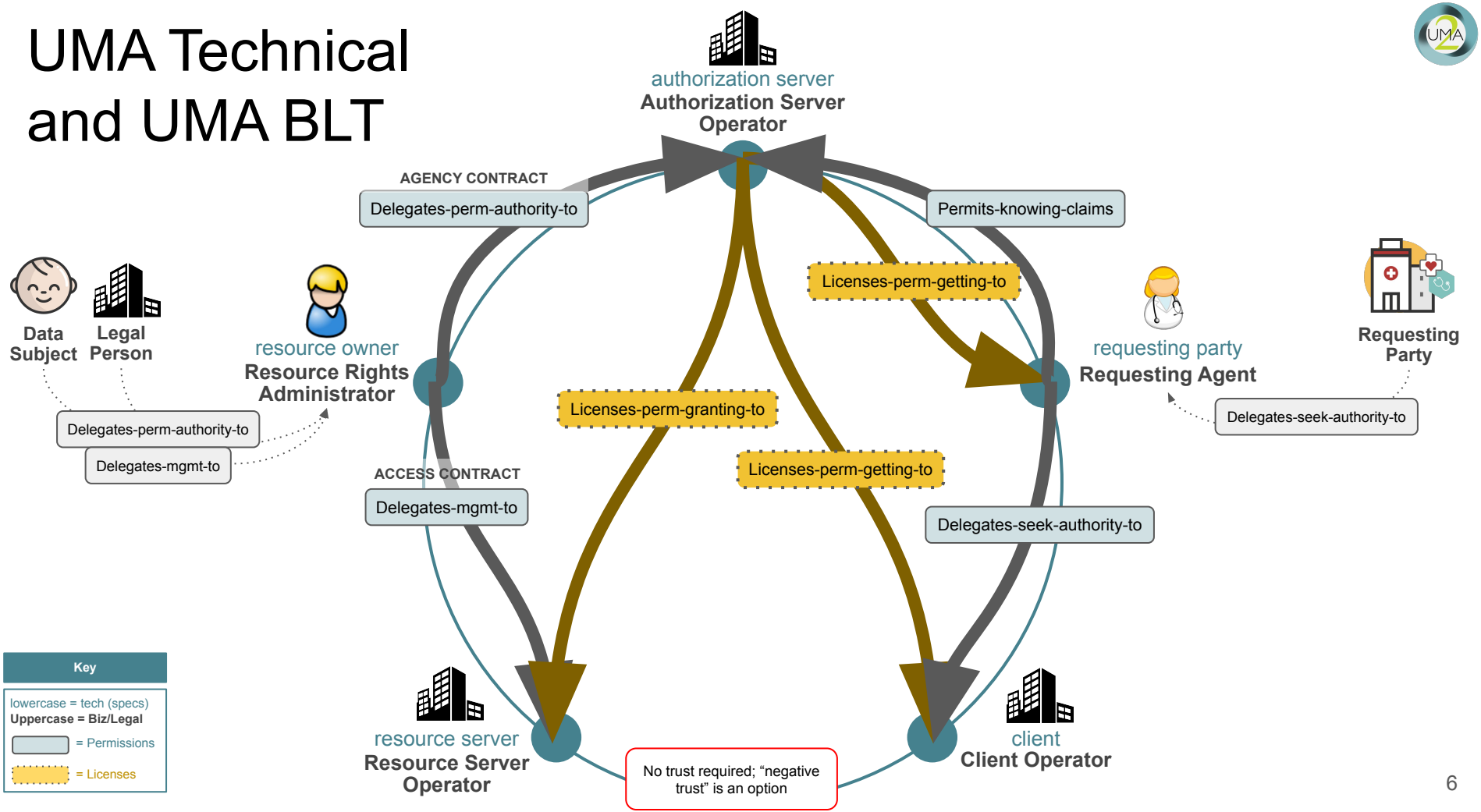
“ALICE-TO-BOB” SHARING

UMA adds **control** of **cross-party sharing**, letting Alice be **absent** when Bob uses a client to attempt access

Alice **controls trust** between resource hosts and authorization services – enabling a **wide ecosystem** of resource hosts, so Alice can manage sharing **across** them



UMA Technical and UMA BLT



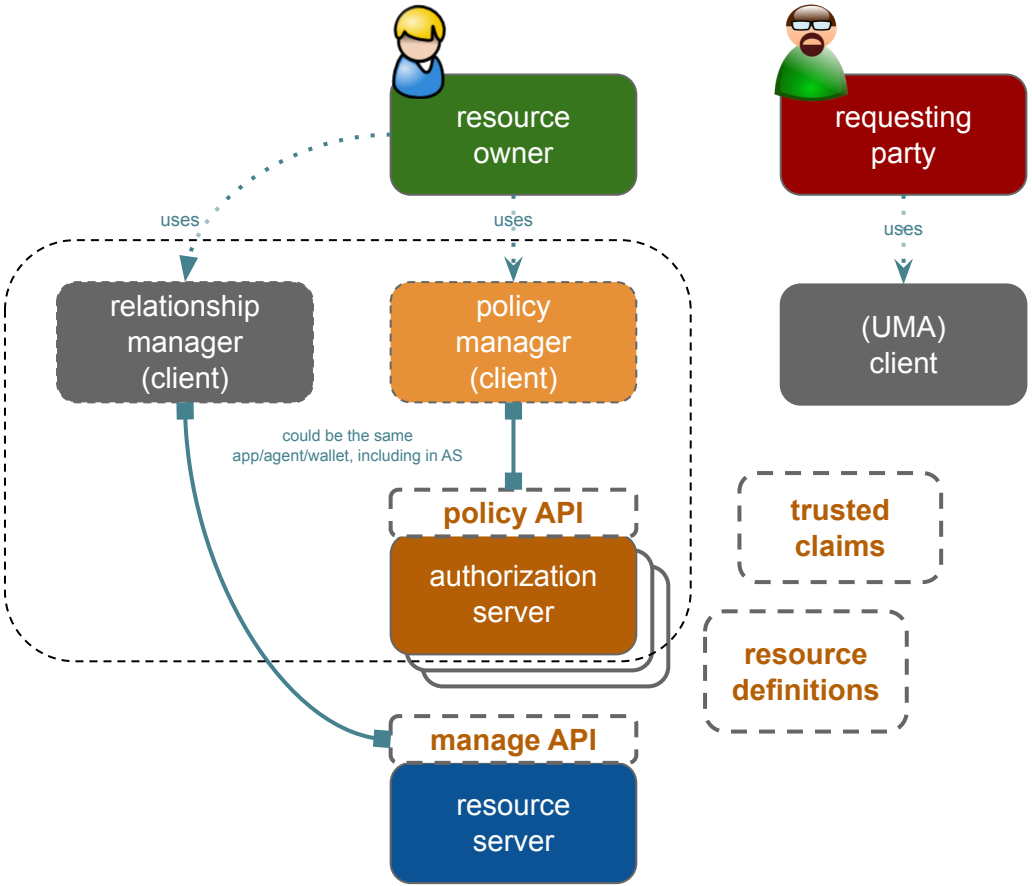
UMA and New Work

Policy Manager extension: AS can delegate policy handling; RO can choose how to manage policy; RO can aggregate management across AS's at one trusted place

Manage API extension (TBD): RO can manage details of resource registration in an interoperable way

Resource definitions (extension? TBD): RS can register API resource and scope templates for UMA clients to follow, to increase interop as well as extent of AS abilities to manage client communities of trust

Trusted claims (TBD): AS delegates claims collection about RqP to other AS's in an interoperable way, with predictable set math



P*P and (OAuth and) UMA

XACML (AND SIMILAR) ASSUMPTIONS

- PEP “proxies” access request for requester (client) **[2-3]**
- Access response is yes/no answer vs. access token potentially introspected later **[12]**
- Policy language is standard vs. entitlements
- Extensive policy at-rest and in-motion handling therefore
- PEP trust in PDP is implied
- There is a single enterprise “resource owner”
- Subject is the implied “requesting party”

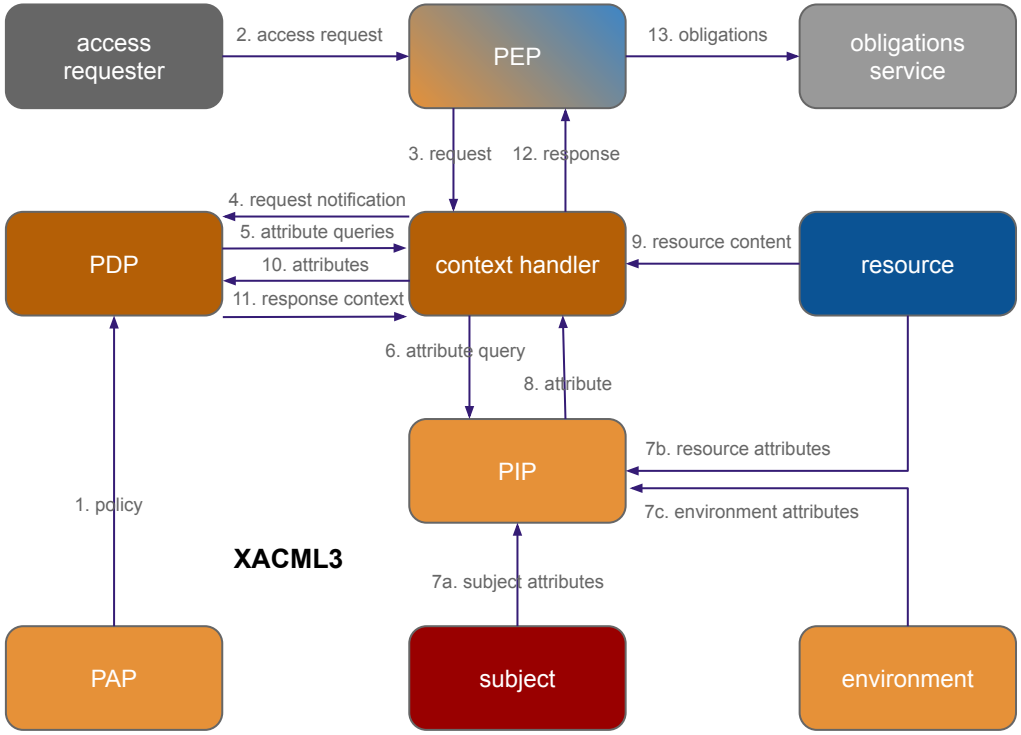
OAUTH IMPLICATIONS

- OAuth entitlement approach improves on cloud scale
- OAuth resource owner authorizes/denies (consents) at run time but enterprise can use XACML for access control

UMA IMPLICATIONS

- UMA AS/RS relationship is akin to PDP/PEP but trust is explicit, in the context of the RO
- Entitlement model and resource registration transfer more control to RS
- Explicit resource owner and requesting party roles standardize flexible access control without standardizing policy language

(UMA2 token endpoint errors map to XACML responses)



Key: AS analogue | authz related | RS analogue | resource related | client analogue | client related | RqP analogue