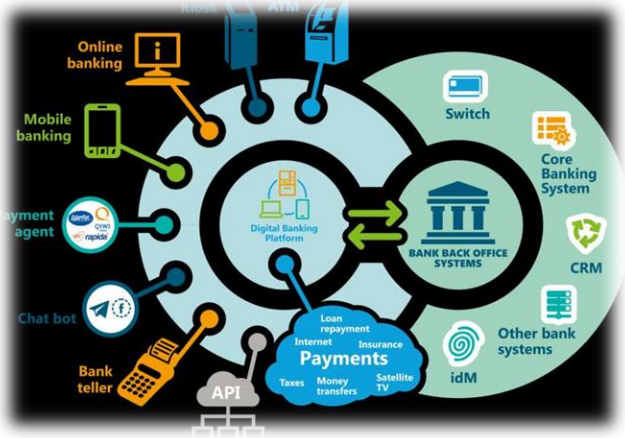
Electronic Signature Creation System (e-SCS)



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Electronic Signatures

- Simple or Standard (SES)
  Might not be considered as a legal binding signature
- Advanced (AES)
  - The signatory can be uniquely identified and linked to the signature
  - The signatory must have sole control of the private key that was used to create the electronic signature
  - The signature must be capable of identifying if its accompanying data has been tampered with after the message was signed
  - In the event that the accompanying data has been changed, the signature must be invalidated

  We start talking about "Digital Signature"
- Qualified (QES)
  QES is AES with a "Qualified" digital certificate. **Equivalent to handwritten signature.**

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PKI Services

- AES and QES relies on PKI services.
- PKI services are built in order to:
  - Manage certificate lifecycle (e.g. issue, renew and revoke)
  - Provide required signature creation and validation information
- Based on e-Transaction Law no. (15) year (2015), a “qualified certificate” for signing financial transactions should be issued from CBJ. Considering this setup, banks act as:
  - Registration Authorities
  - Relying Parties
  - **AES/QEA Creation and Validation Provider**

Here is our solution

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E-SCS

- Advanced electronic signatures are governed by set of international standards (i.e. RFC, ISO and ETSI).
- ETSI standards are considered as extension to basic and technical standards (RFC and ISO) to fulfill the legal binding requirements.
- In Jordan, ETSI standards are adopted based on TRC publications

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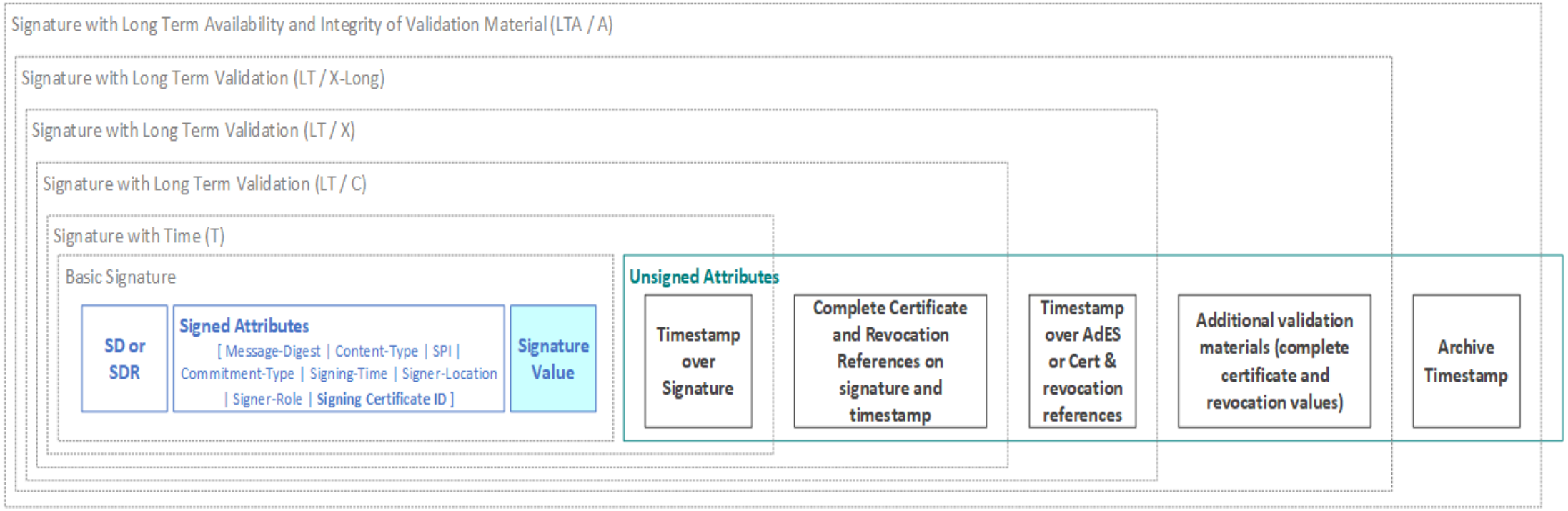
E-SCS – ETSI Standards

Electronic Signature type, form, and profile mainly depends on:

- Legal consequences of the signed document.
  - Ephemeral use
  - Short-term validation
  - Long-term validation
- Content type.
- Existence of multiple signatures.

E-SCS – ETSI Standards



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Electronic Signatures – Deployment Options

- Electronic Signature creation and validation functionality:
  - Embedded into each information system
  - Independent and centralized
- Sinning keys hosting and secure devices
  - Remote option (i.e. HSM boxes)
  - Local option (e.g. smartcards and USB tokens)

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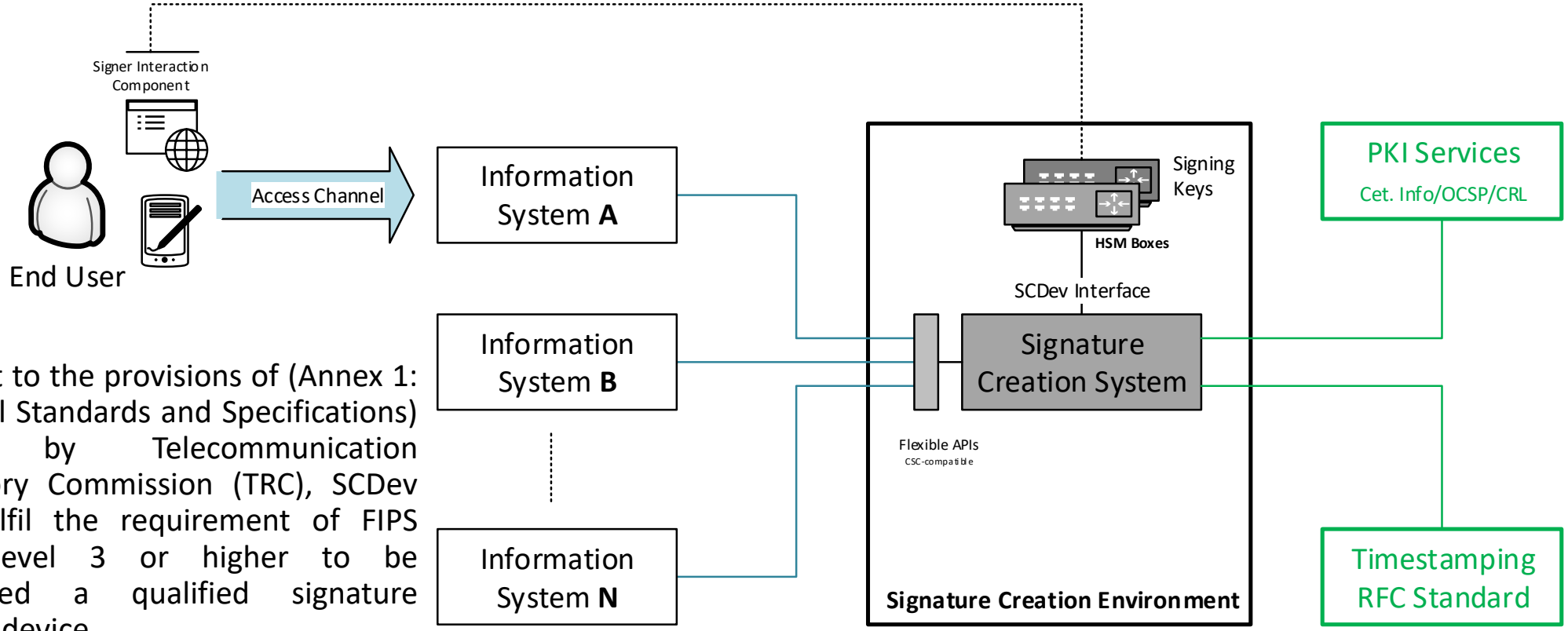
E-SCS – Architectural Design



Pursuant to the provisions of (Annex 1: Technical Standards and Specifications) issued by Telecommunication Regulatory Commission (TRC), SCDev must fulfil the requirement of FIPS 140-1 level 3 or higher to be considered a qualified signature creation device.

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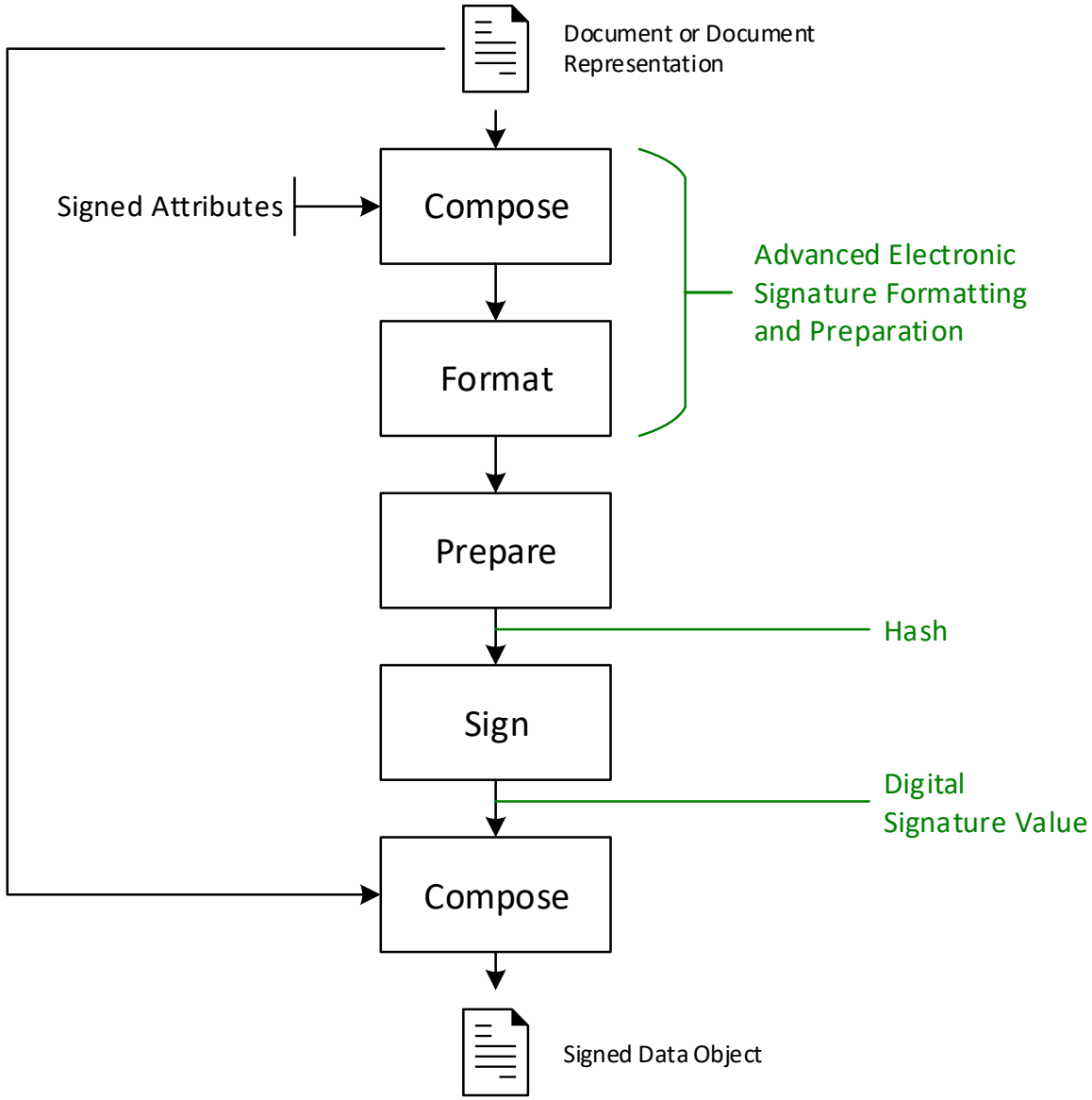
E-CSC – Signature Creation Process Flow



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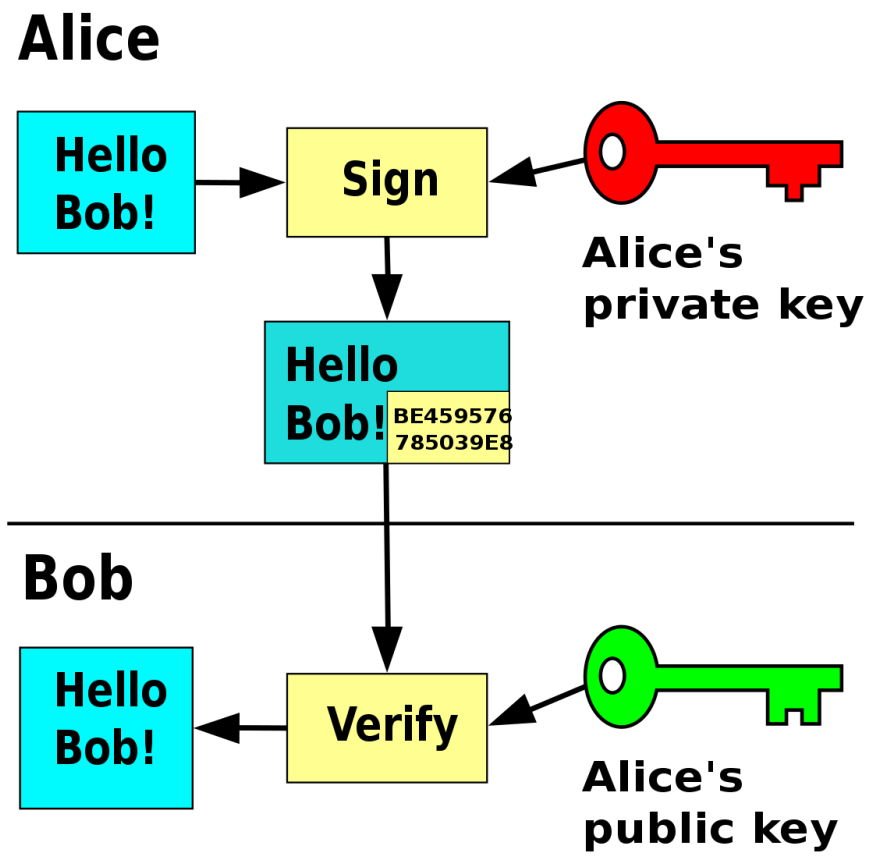
Signature Creation system

digital signature scheme

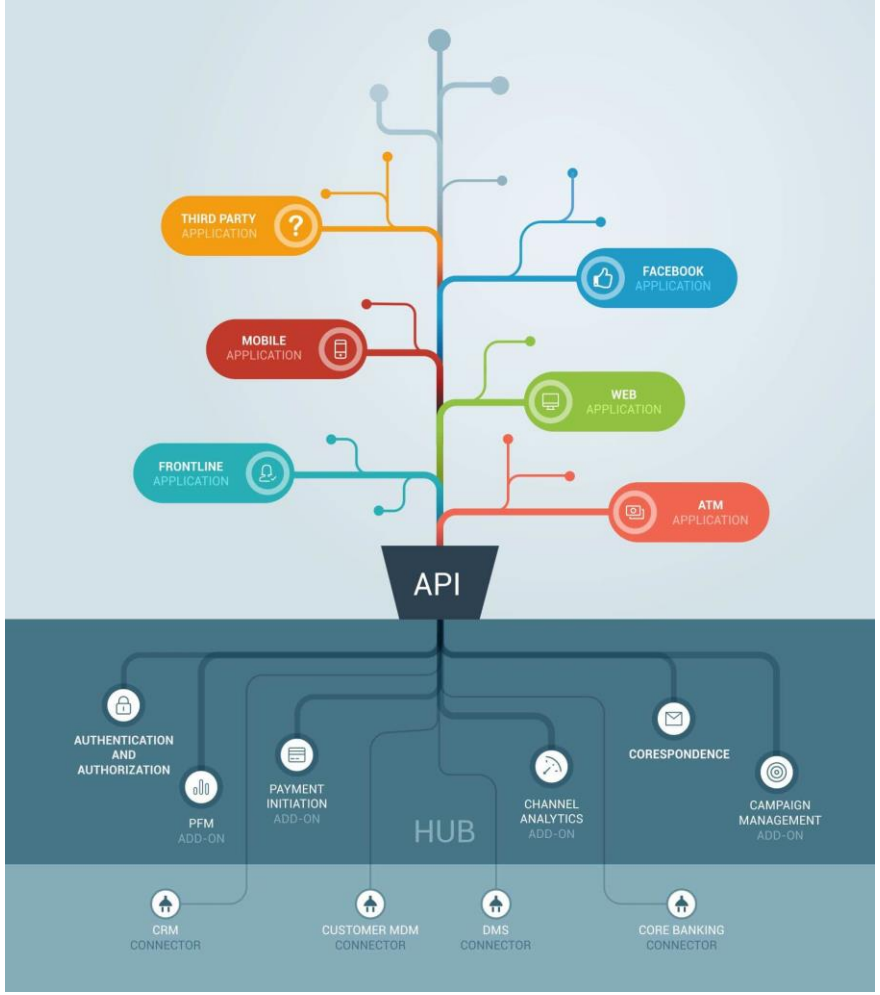
- ✓ *G* (key-generator) generates a public key (*pk*), and a corresponding private key (*sk*), on input 1^n, where *n* is the security parameter.
- ✓ *S* (signing) returns a tag, *t*, on the inputs: the private key (*sk*), and a string (*x*).
- ✓ *V* (verifying) outputs *accepted* or *rejected* on the inputs: the public key (*pk*), a string (*x*), and a tag (*t*).



Omni Channel

Today’s customers want quick and easy access to their accounts. They don’t want to memorize lots of passwords or take many authentication steps just to do their daily banking. However, online banking security requirements can make it challenging for you to meet these demands as keeping your customers’ data secure is your number one priority.

Omni channel banking solutions make it easy for app users to log into their accounts – while making it difficult for hackers to break in. Customers can log in by entering simple username and password. They also have the option to use hardware or software security tokens. You can also set up two-factor authentication or authorization after customers begin to conduct online transactions, as this will provide an added layer of security.



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We Can Help With

- Registration authority analysis and development (RA)
- Signature creation system is a comprehensive seamless solution
- Digital banking solution analysis and development
- Develop a customize middleware as per the financial institutes needs
- Business Consultations services
- Certificate service provider integration development (CSP)

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Thank You

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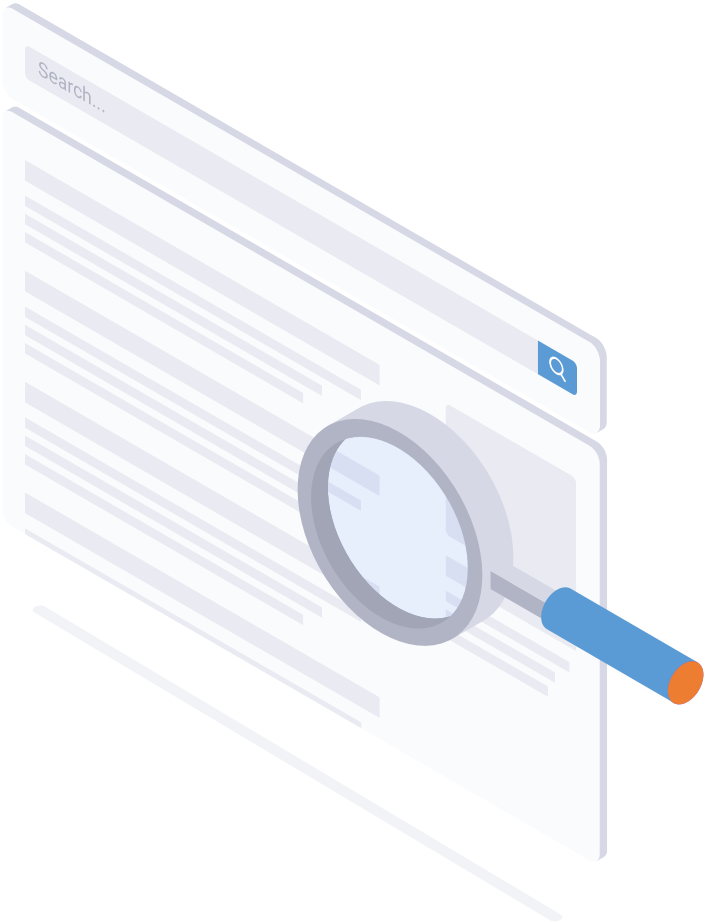

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