eForms in Belgium

An anthology of our metadata-driven approach

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In this presentation

- About the Belgian federal e-Procurement platform
- Data quality in eForms
  - How to help users provide "good data"
    - Tailoring
    - Reconcile the metadata-driven eForms approach and user-friendliness

- Challenges we face(d)
- Pros and cons of the metadata-driven approach
- Key success factors

The Belgian federal e-Procurement platform (1/2)

- Belgium's official tender journal
  - Central publication hub, used by national "eSenders" a.k.a. partner apps
  - TED eSender for Belgium
- Pre- and post-award services
  - eNotification, eAccess, ESPD, eSubmission, eCatalogue, …
- Free-of-charge for end users
- Modular (use what you need)

PUBLIC PROCUREMENT DATA SUPERPOWERS

The Belgian federal e-Procurement platform (2/2)

- Since 4 September 2023:

  - New platform, developed from scratch
  - Modern UI, integrated services / applications
  - API-first design

  - Go-live of eForms
    - Metadata-driven approach
    - SDK version 1.8
    - Full eForms support (40 forms + 3 custom national forms)

Tailoring eForms (1/2)

- Define which data (not) to capture

- SDK → BDK
  - Scripted tailoring for fields.json and notice types
    (hide / remove fields, make fields mandatory and/or read-only, …)
  - Manual tailoring of schematron validation rules, view templates, …
  - 3 custom national forms: E1 (PMC), E3 (CN), E4 (CAN)
    - Derived from existing notice subtypes (4, 16, 29)
    - Advantage of using the same datamodel, but also the same technical and functional setup

Tailoring eForms (2/2)

- Potential of tailoring to extend eForms
  - Tailor in extra fields to capture additional data (e.g. policy data)
  - Abandoned for now due to additional complexity
    - Would require creation of 2 XML instances (BE only + TED)
    - Hard to implement additional business requirements (e.g. make fields optional or mandatory depending on the type or authority level of the CA)
  - Current alternative:
    - Separate hardcoded forms
  - Future alternative:
    - Dynamic webforms
    - SDK and metadata-driven approach as inspiration to define form content

PUBLIC PROCUREMENT DATA SUPERPOWERS

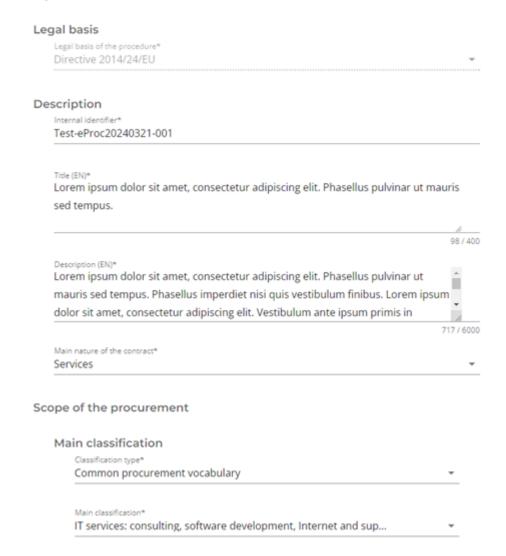# Reconcile eForms and user-friendliness (1/4)

- Narrow down the available options using platform logic
  - organisation parameters (e.g. legal basis)
  - previous publications (e.g. CAN after CN)
  - selected procedure type, special purchasing technique

Legal Basis*
Directive 2014/24/EU (Classical sector)

General purpose of the publication*
Competition

Specific purpose of the publication*
Contract or concession - standard regime

Special purchasing technique
Framework Agreement

Type of framework agreement*
Framework agreement without reopening of competition

Procedure*
Restricted procedure

Notice*
16 - Contract notice - standard regime

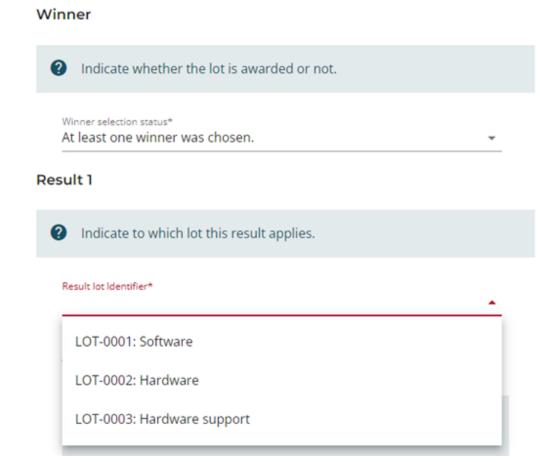# Reconcile eForms and user-friendliness (2/4)

- Prefill available platform data in the form
  - Avoid double work
  - Lock key fields (read-only)
  - "Back-sync" changes to the platform

  - Sometimes quite extensive, e.g. import received tenders into CAN → prefills 90% of the result section of the form

PUBLIC PROCUREMENT DATA SUPERPOWERS

Reconcile eForms and user-friendliness (3/4)

- Offer inline help
  - Explain users what data is expected and how to provide it
  - Refer to information outside the platform (e.g. helpcenter, legal documents, …)

Winner

❓ Indicate whether the lot is awarded or not.

Winner selection status*
At least one winner was chosen.   ▾

Result 1

❓ Indicate to which lot this result applies.

Result lot Identifier*

                                                            ▴

LOT-0001: Software

LOT-0002: Hardware

LOT-0003: Hardware support

Reconcile eForms and user-friendliness (4/4)

- Reduce complexity
  - Show only the mandatory fields by default
  - Human readable validation messages

Extended view (display all fields)

⚠ • Information under 'ND-AuctionTerms' is missing (element 'cac:AuctionTerms' is mandatory under this path:
/*/cac:ProcurementProjectLot[cbc:ID/@schemeName='Lot']/cac:TenderingProcess)
• Information under 'ND-LotReviewTerms' is missing (element 'cac:AppealTerms' is mandatory under this path:
/*/cac:ProcurementProjectLot[cbc:ID/@schemeName='Lot']/cac:TenderingTerms)
• Information under 'ND-PostAwarProcess' is missing (element 'cac:PostAwardProcess' is mandatory under this path:
/*/cac:ProcurementProjectLot[cbc:ID/@schemeName='Lot']/cac:TenderingTerms)
• Information under 'ND-LotReservedParticipation' is missing (element 'cac:TendererQualificationRequest' is mandatory under this path:
/*/cac:ProcurementProject
• Information under 'ND-Non
this path: /*/cac:Procurem
• BT-24-Lot is mandatory in r
• BT-115-Lot is mandatory in
• BT-60-Lot is mandatory in r
• BT-736-Lot is mandatory in
• BT-743-Lot is mandatory in
• BT-764-Lot is mandatory in
• rule|text|BE-Procurement
• rule|text|BE-Procurement

⚠ • 5. Lots - Conditions de la mise aux enchères : indiquer s'il s'agit d'une enchère électronique
• 5. Lots - Organisation chargée des procédures de recours : ajouter l'organisation de révision
• 5. Lots - Processus postérieur à l'attribution : indiquer si la commande en ligne et le paiement en ligne seront
• 5. Lots - Marchés réservés : ajouter des infos concernant des marchés réservés
• 5. Lots - Conditions de l'appel d'offres : ajouter au moins un critère de sélection
• 5. Lots - Description : remplir une description
• 5. Lots - Accord sur les marchés publics (AMP) : indiquer si l'accord sur les marchés publics (AMP) s'applique.
• 5. Lots - Utilisation de fonds de l'UE : indiquer si l'appel d'offres est au moins partiellement financé par des fo
• 5. Lots - Exigences relatives à l'exécution du marché : indiquer si cette adjudication s'inscrit dans le cadre de la
• 5. Lots - Exigences relatives à l'exécution du marché : sélectionner la condition pour la facturation en ligne
• 5. Lots - Catalogue électronique : sélectionner la condition pour la catalogue électronique
• 5. Lot - Lieu d'exécution : ajouter un lieu d'exécution pour chaque lot.
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Challenges we face(d)

- Tailoring maintenance strategy

- Data exchange between platform and eForms
  - What changes are allowed?
  - When are changes (still) allowed?
  - …

- Preparing the first minor and major SDK-upgrades
  - Even minor version releases require changes to our engine, e.g. to remove fixes for issues which have been solved in the new minor version.
  - More changes to process when skipping multiple minor versions (e.g. by going from 1.8 to 1.11)

Advantages of the metadata-driven approach

- Resilience to (regulation) changes

- Fewer resources needed to implement changes

- Possibility to create and tailor additional forms, e.g. for national use

- Some essential features are included in the SDK, e.g. rendering forms in HTML/PDF

- Easier to support multiple SDK-versions simultaneously

Points of attention with the metadata-driven approach

- SDK validation engine does not cover all business needs
  - E.g. additional data validation, difficult to achieve through tailoring
- Dependency on new SDK versions for bugfixes, new features, new or more precise validation rules, …
- Vulnerable to "unwanted" changes
  - E.g. bugs introduced by new patch versions
- Still some unknowns
  - Dynamic validation: what and when?

Key success factors

- Close collaboration between business and development teams

- Business team with longstanding experience in eprocurement

- Skilled development team (steep technical challenges)

- Adopting the metadata-driven approach proposed by OP and therefore being able to count on their feedback and support.

- Communication, training and support

Thank you!

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