Managing Administrative Law Cases using an Adaptable Model-driven Norm-enforcing Tool

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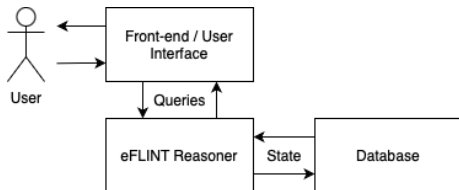
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Complex
Cyber
Infrastructure

Contributions

Goal: Develop a case
management system that
increases compliance and
provides transparency to
applicants.

Contributions:

- An adaptable case management tool that reasons about applicable norms.
- An evaluation against elicited user requirements resulting in suggestions for further development.

User requirements [1]

- Workflow models
- Reasoning with partial information
- Link to relevant sources
- Recall the details of previous cases

eFLINT [2]

- Normative reasoning
- Powers and duties
  - Acts
  - Duties
- Compliance checking

Background
ooooo

The Tool
oooo

Conclusion
o

References
o

eFLINT

Acts

```
Act grant-request
  Actor servant
  Recipient applicant
  Conditioned by [Income] <= [Income limit]
  Creates [Quittance granted].

Physical send-approval-letter Syncs with
    grant-request (servant, applicant)
```

eFLINT

Duties

```
Duty process-application
  Holder case-manager
  Claimant applicant
  Terminated by grant-request
              ,deny-request
  Holds when application()
```

The Tool

Background
○○○○○

The Tool
○●○○

Conclusion
○

References
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Case selection screen

Dashboard   Cases   Marten Steketee ∨

Cases

NEW CASE		
NAME	DEADLINE	
Demo Case	2023-01-01	Open
Demo Case	2023-01-01	Open
Demo Case	2023-08-04	Open

Background
○○○○○

The Tool
○○●○

Conclusion
○

References
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Information editing screen

Client details:

Name
Demo Case

Date
07 / 19 / 2023 🗓

Deadline
08 / 04 / 2023 🗓

Notes

Partner

● Yes   ○ No   ○ Unknown

Age

36

Income

55219

Pension age reached

○ Yes   ○ No   ● Unknown

Action screen

Client details   ✎ Edit Case

Name
Demo Case
Date
2023-07-19
Deadline
2023-08-04
Notes

Information
1 - [Pension age reached]
Answer: **no**
2 - [Partner]
Answer: **yes**
3 - [Age]
Answer: **36**
4 - [Income]
Answer: **55219**

Actions

Actions to take

Send approval letter
Normative status: NOT Allowed
EXECUTE ⚠

Send information request letter
Normative status: Allowed
EXECUTE

Send rejection letter
Normative status: Allowed
EXECUTE

Background
OOOOO

The Tool
OOOO

Conclusion
●

References
O

Conclusion

Current contributions:

- Adaptable Norm-enforcing Case Management system
- An evaluation against elicited user requirements resulting in suggestions for further development.

Next steps:

- Additional user testing
- Providing transparency to explain decisions

[1] N. M. Verheijen, *Automating Compliance in Government Organisations using eFLINT*, https://ltvanbinsbergen.nl/files/theses/nina-verheijen-2022.pdf, Last accessed: 6/12/2024, 2022.

[2] L. T. van Binsbergen, L. C. Liu, R. van Doesburg, and T. van Engers, "eFLINT: A domain-specific language for executable norm specifications," in *GPCE 2020 - Proceedings of the 19th ACM SIGPLAN International Conference on Generative Programming: Concepts and Experiences, Co-located with SPLASH 2020*, Association for Computing Machinery, Inc, Nov. 2020, pp. 124–136, ISBN: 9781450381741. DOI: 10.1145/3425898.3426958.

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