



**INCM**



# INNOVATION

- PARTNERSHIPS WITH UNIVERSITIES, RESEARCH CENTRES AND LABORATORIES
- INCM INNOVATION AWARD
- 6M€ INVESTMENT IN R&D
- 4 PATENT REQUESTS
- 20 ONGOING PROJECTS



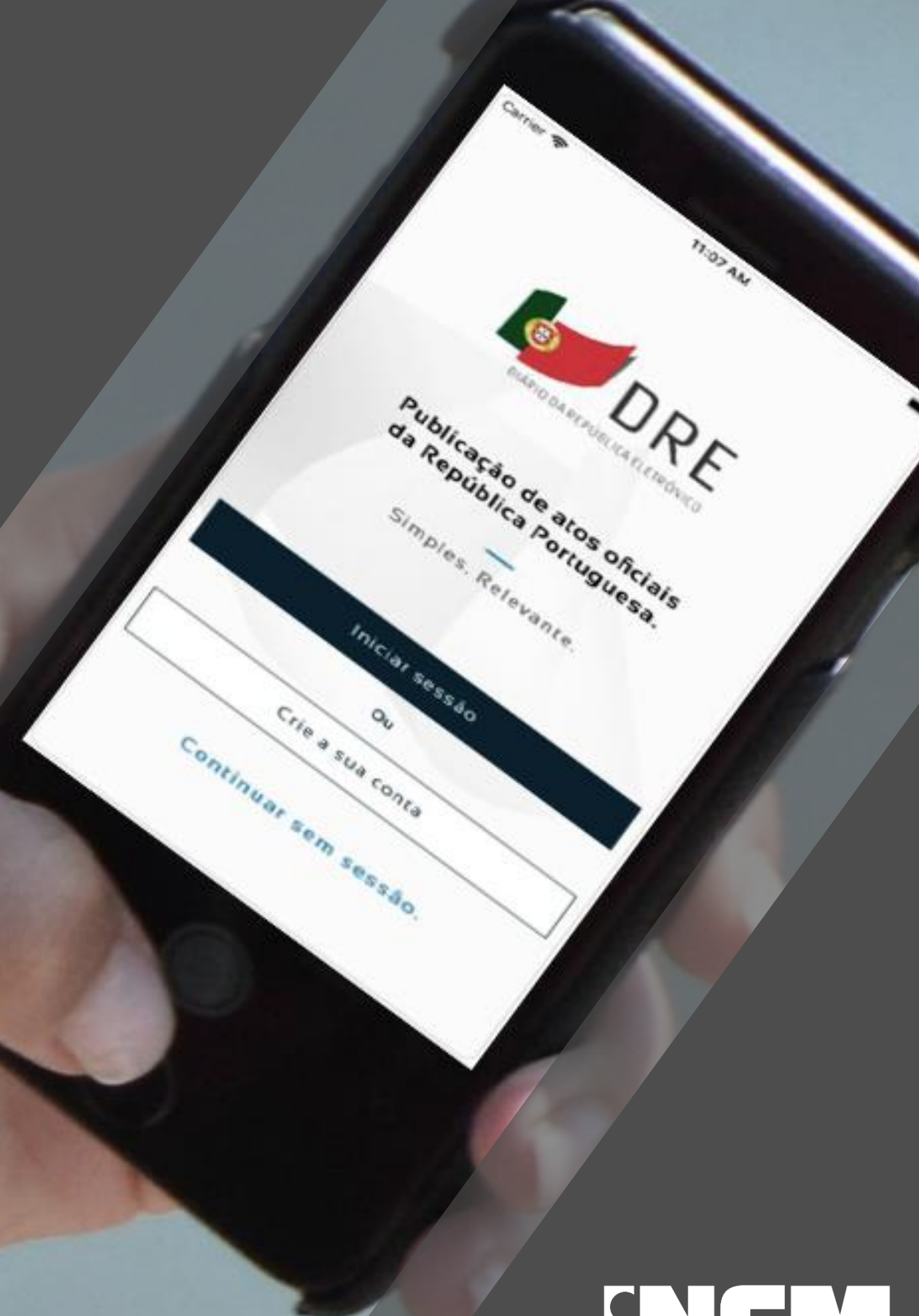
# INNOVATION

- SECURITY PRINTING
- AUTHENTICATION
- NANOTECH
- UNIQODE
- EGOV
- ID3D FACE
- INTELIGENT SEARCH
- INDUSTRY 4.0



# OFFICIAL JOURNAL

- ESTABLISHED IN 1997 — DIGITAL EDITION
- EVERY ACT SINCE 1910
- MILLIONS OF ACCESSES: 19M SINCE MAY '19
- MILLIONS OF QUERIES: 2M SINCE MAY '19
- UNIVERSAL AND FREE SINCE 2016
- ALLOWS FOR SEARCH AND ALERTS
- APP VERSION SINCE 2018
- NEW SERVICES IN JUNE...



# DRE.PT AS AN INTELLIGENT USER-FRIENDLY SEARCH DIGITAL LIBRARY

## “CLUMSY” USER

(ERROS IN TYPING, WHICH CAN BE COMMON DUE TO THE USE OF MOBILE PHONES OR PADS; USER UNSECURE ABOUT SEARCH TERMS)

USER IS PRESENTED WITH A LONG LIST OF  
AMBIGUOUS SEARCH RESULTS

USER HAS LITTLE KNOWLEDGE OF THE CONTENTS

## GOAL

TRY TO GUESS THE USER TASK AND  
ANTICIPATE THE RESULTS FOR AS  
SOON AS POSSIBLE

# DRE.PT AS AN INTELLIGENT USER-FRIENDLY SEARCH DIGITAL LIBRARY

## “CLUMSY” USER

(ERROS IN TYPING, WHICH CAN BE COMMON DUE TO THE USE OF MOBILE PHONES OR PADS; USER UNSECURE ABOUT SEARCH TERMS)

USER IS PRESENTED WITH A LONG LIST OF  
AMBIGUOUS SEARCH RESULTS

USER HAS LITTLE KNOWLEDGE OF THE CONTENTS

## SOLUTION AND TECHNIQUES

MAKE USE OF SPELLCHECKING OR AUTO-COMPLETE OF TERMS, AS USER TYPES THE KEYBOARD.

e.g.: IF THE USER TYPES “PROF” OR EVEN “PORF” THE SYSTEM IMMEDIATELY CAN PROPOSE “PROFESSOR”, “PROFESSIONAL”, “PROFISSÃO... THE SUGGESTIONS ARE MADE BASED ON THE PERCEPTION OF USED CONTEXT AND THE PAST USAGE OF THE SYSTEM BY THE APPLICATION OF ALGORITHMS FOR SESSION ANALYSIS AND CLICK MODELS

# DRE.PT AS AN INTELLIGENT USER-FRIENDLY SEARCH DIGITAL LIBRARY

## “CLUMSY” USER

(ERROS IN TYPING, WHICH CAN BE COMMON DUE TO THE USE OF MOBILE PHONES OR PADS; USER UNSECURE ABOUT SEARCH TERMS)

USER IS PRESENTED WITH A LONG LIST OF AMBIGUOUS SEARCH RESULTS

USER HAS LITTLE KNOWLEDGE OF THE CONTENTS

## SOLUTION AND TECHNIQUES

CLUSTER OF RESULTS BY SUBJECT AND/OR RANK THEM ACCORDING TO THEIR PAST POPULARITY. USE UNSUPERVISED ANALYSIS OF CONCEPT ASSOCIATIONS (FORMAL CONCEPT ANALYSIS) AND ORDER THE DOCUMENTS ACCORDING TO THEIR DYNAMIC POPULARITY, WHICH CAN BE DEFINED BY THE NUMBER OF PAST ACCESSES.



# DRE.PT AS AN INTELLIGENT USER-FRIENDLY SEARCH DIGITAL LIBRARY

## “CLUMSY” USER

(ERROS IN TYPING, WHICH CAN BE COMMON DUE TO THE USE OF MOBILE PHONES OR PADS; USER UNSECURE ABOUT SEARCH TERMS)

USER IS PRESENTED WITH A LONG LIST OF AMBIGUOUS SEARCH RESULTS

USER HAS LITTLE KNOWLEDGE OF THE CONTENTS

## SOLUTION AND TECHNIQUES

HIGHLIGHT SEARCH TERMS, POINT SIMILAR DOCUMENTS, RECOMMEND HELP OF THESAURI OR CLASSIFICATION SYSTEMS. APPLY SEMI-AUTOMATED CLASSIFICATION WITH, FOR EXAMPLE, THE EUROVOC THESAURUS, RELYING ON A MACHINE LEARNING CLASSIFIER.



# DRE.PT AS A RICH CONTENTS' DIGITAL LIBRARY...

## THE GOAL

SUPPORT THE USER EXPLORING OF THE COLLECTION  
(SERENDIPITY...)

## SOLUTION AND TECHNIQUES

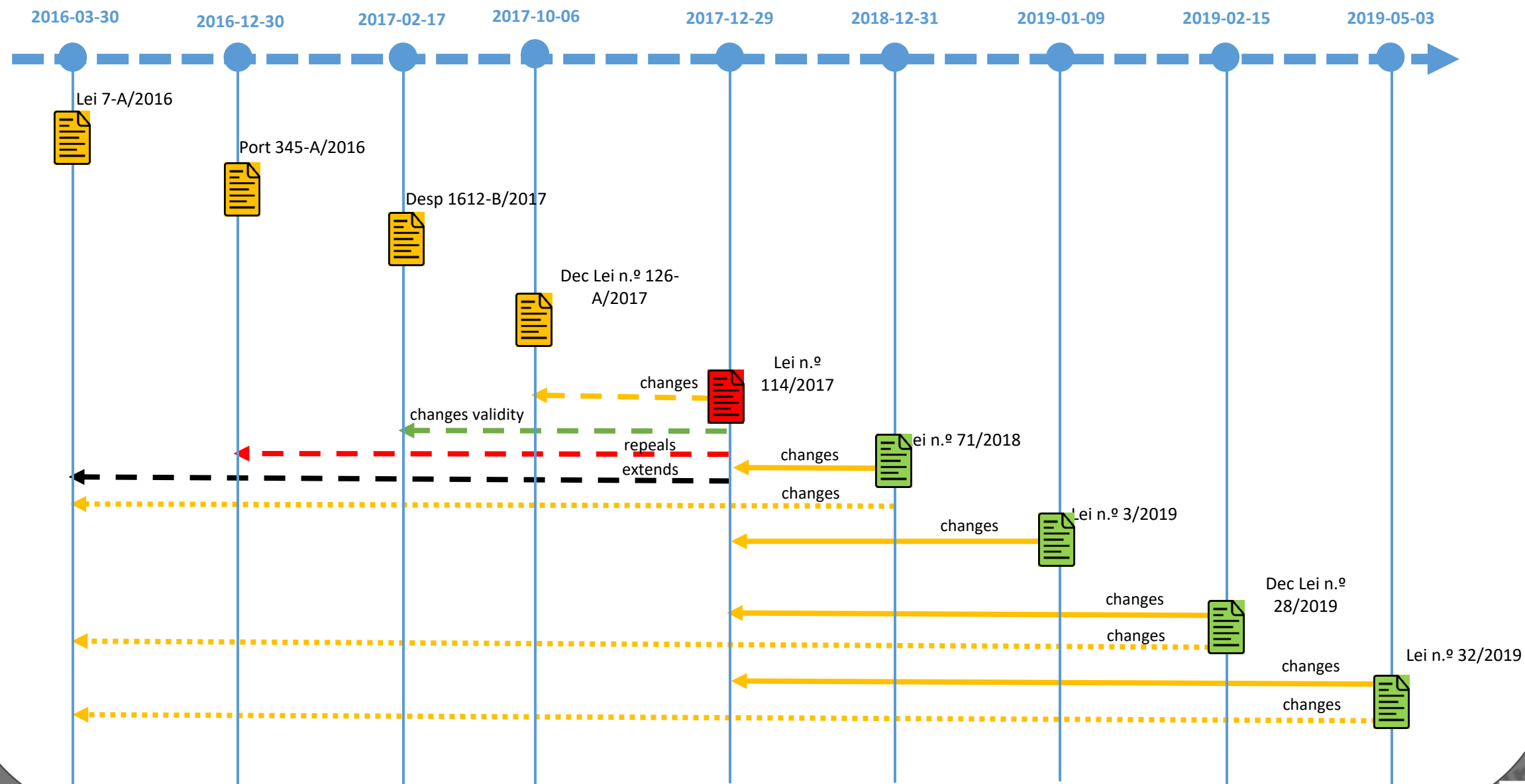
MANY DOCUMENTS ARE RELATED, SO AN ONTOLOGY OF THESE RELATIONS AND A POWERFUL VISUAL INTERACTION CAN HELP USERS EXPLORING THE COLLECTION, ENRICHING THE METADATA WITH AUTOMATED **ENTITY RECOGNITION** TECHNIQUES.



# DRE.PT AS A RICH CONTENTS' DIGITAL LIBRARY...

## PROOF OF CONCEPT OF THE BROWSING FEATURE

### Lei n.º 114/2017 - 2018 Lei do Orçamento do Estado





# DRE.PT CODE THE LAW - HELPING CONSUMER RIGHTS

## PROBLEMS

Difficulties to interpret consumer rights, to articulate with another legislative documents and receive answers.

## SOLUTION AND TECHNIQUES

Go through the interpretation of commercial or operational rules and code them.

Document classification techniques/processes.

Pre-processing a large number of documents with tokenization, stop words removal, stemming, term identification, synonyms handling, word validation, pruning.

Calculation functions intended in the project of rules.

Simulator will respond to the citizen about his own situation and his/her rights and obligations.



# CONCLUSIONS



A COMPANY THAT FOLLOWS STRATEGIC GUIDELINES, INNOVATION AND INTERNACIONALIZATION

INNOVATION THAT IS BASED ON PROTOCOLS ESTABLISHED WITH UNIVERSITIES, LABORATORIES AND RESEARCH CENTRES, AND HAS BEEN ALLOWING FOR THE ACCESS TO NEW MATERIALS, NEW TECHNOLOGIES AND PRODUCTION PROCESSES, NEW MARKETS

A COMPANY THAT IS DEVELOPING A SMART SEARCH ENGINE FOR THE OFFICIAL JOURNAL, AND A SIMULATOR THAT HELPS THE CONSUMER WITH HIS OWN LEGAL QUESTIONS.

THE ACCESS TO MILLIONS OF RELATED CONTENT WILL BECOME MUCH FASTER, OBJECTIVE, INTUITIVE, VISUAL AND INTERACTIVE



**THANK YOU**

**INCM**  
IMPrensa Nacional Casa da Moeda