



IRS Office of the Chief Procurement Officer

November 16, 2020

Using Software to Get the Right Clauses in Contracts

Using an Agile Approach for Data Visualization

David Gill, Procurement Data Scientist



Why Is Clause Review Software Needed?

- It is challenging to keep up-to-date with the FAR, agency regulations, and other sources of procurement policy.



Markland Victor S

Security Clauses Tips Sheet Bookmarked 1-26-2017.docx
David, here is the security clause checklist/ cheat sheet.



11/2/2017

*Procurement Communications

ACTION: Policy Updates

ACTION: Please read the following Office of



7/5/2017

[Contract Review Tool](#)

- Well designed clause review software makes it easy to ensure clauses are up-to-date and check for other errors (e.g. missing clauses, contradictory clauses).



Independent Studies on Contract Clauses

- IRS Privacy office study found that 73% percent of staff-like access contracts omitted some required security clauses or used outdated versions of these clauses. The study noted that security clause compliance occurred at a much higher rate with Contracting Officers who used automated clause review study.
- The Department of Homeland Security, Office of the Chief Procurement Officer commission a study on clause logic applications that was finalized in September 2020. The study examined two approaches to clause logic:
 - (1) Rules-based logic to assist contract specialists in building their solicitations by answering a series of questions, and;
 - (2) A vanguard of artificial intelligence software applications that “read” requirements and then recommend clauses based on FAR and agency policy.



Software Workflow

- Software can examine language found in contract documents and instantly provide a report identifying missing contract clauses or other errors.



- This is an efficient, innovative approach that differs from burdensome, user-input heavy clause logic software.



Gill's Clause Automation Maturity Model (CAML)

Level 1 Manual

- Inserting or drafting clauses, ad-hoc and by hand.
- Example: Pulling clause sheet out of filing cabinet.

Level 2 Computerized

- Clauses are in an IT system that relies on user input to select the appropriate clauses.
- Example: User Selects each clause to be inserted in a contract.
- Example: System asks user to answer questions that generate applicable clauses.

Level 3 Auto Clause Generation

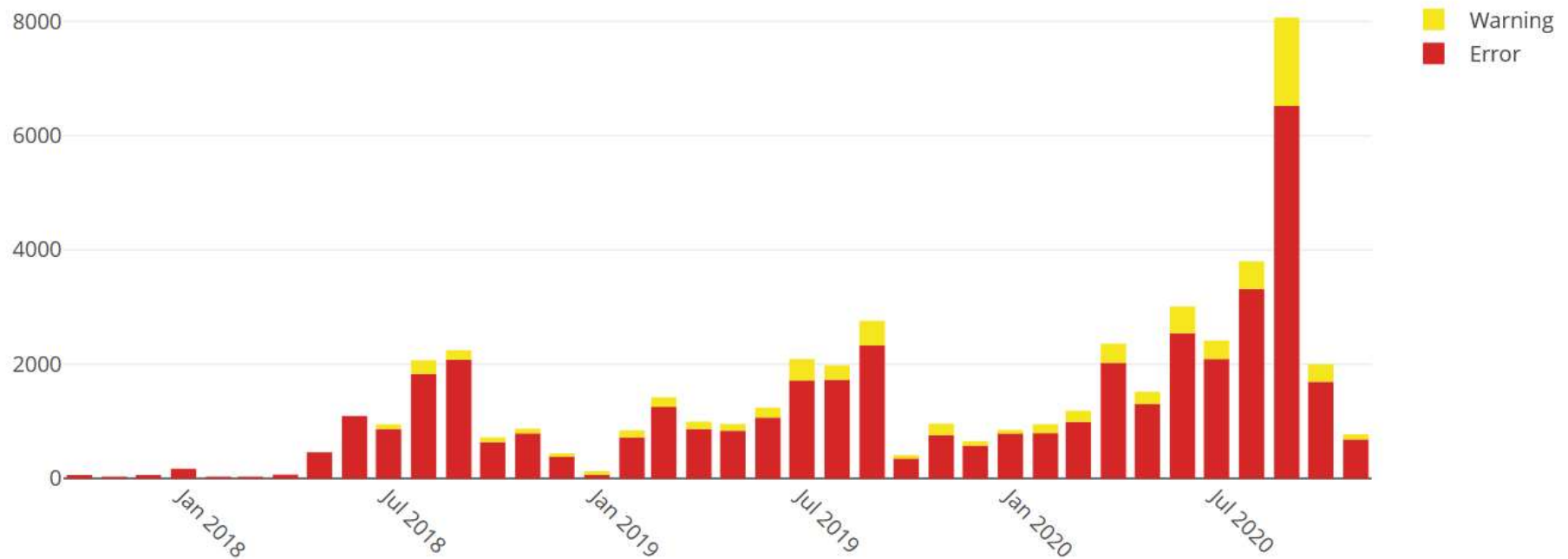
- Natural language processing is used to examine the words in contract documents to generate the appropriate clauses and detect erroneous or objectionable clauses.
- Example: Software executes business rules to identify outdated or contradictory clauses.
- Example: Machine learning auto-detects what is being purchased and generates applicable clauses.



IRS Has Detected and Correct Over 50,000 Clause Issues Using Automated Review

- Clause change recommendations are provided instantly to IRS Contracting Officers and a count of clause issues identified thru automated review is maintained an integrated dashboard.

Errors And Warnings by Date





Deep Dive on FAR 52.204-25 Telecommunications Security Clause

- Detail view of documents containing errors with telecommunications security language mandated by National Defense Authorization Act. A clause bot was used to issue mass modifications ensuring that the latest clause was included in contracts.

