FDA's Virtual Assistant: Utilizing Machine Learning for Automated Customer Service

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Background

The **Office of Computational Science (OCS) Service Desk** is a reviewer's single source of information for **all 24** OCS supported tools and services.

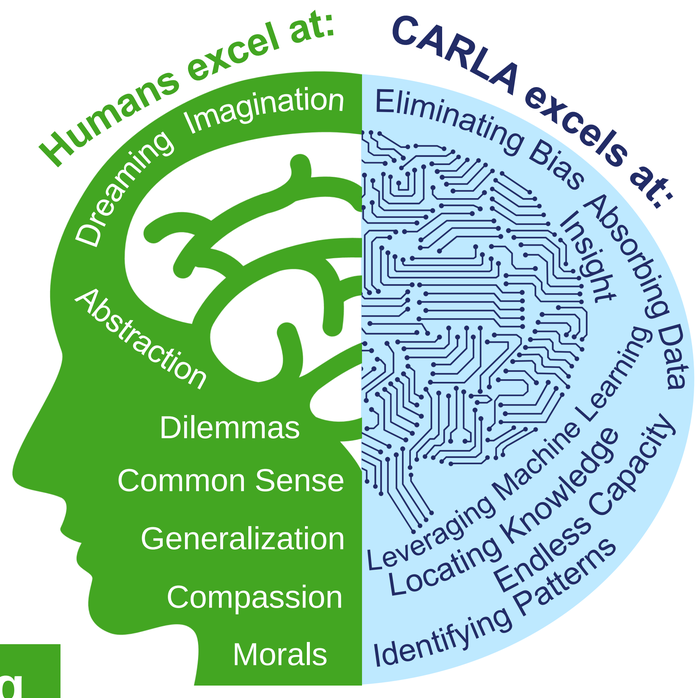
We received over **2,500 total requests** for support in 2018, a **111 percent increase** from 2016

We received **582 analysis requests** in 2018, an **increase of 152 percent** from 2016

We aim to provide **innovative, flexible, and reliable support** for OCS Tools and Services in support of regulatory review

We strive to **revolutionize data** for **faster decision making** by connecting artificial intelligence and data automation to clinical research

Service Desk



CARLA

Innovative, cognitive, and scalable conversational framework

Local (On-prem or embedded) installation with no external dependencies – *for data sensitive applications or lack of internet connectivity*
- Available on FDA Intranet

Standard Functionality
- Intent classification (Machine Learning)
- Entity matching
- Configured dialog flows

Enhanced Functionality
- Integrated Sentiment analysis of user input
- Slots, Folders, Actions, and Digressions

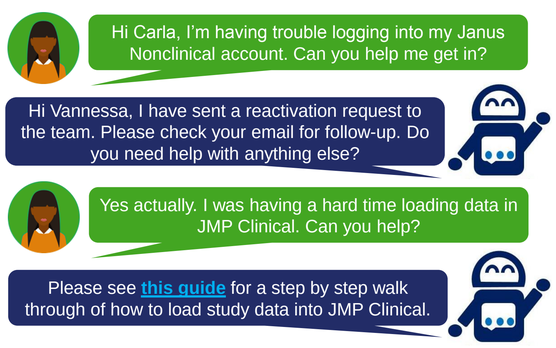
Version Control
- Create and manipulate multiple versions of workspaces

AI-Based Intent Conflict Resolution
- Easily discover duplicates and similar examples in multiple intents

Rich Output Types
- Output text, images, or options

Connect to an agent
- With chat history

Natural Language Processing



CARLA can interpret requests without the need for key words using Natural Language Processing.

Logs are captured and sent to the Service Desk, eliminating back and forth emails.

Medical Reviewer's Day

FDA's Future with CARLA

Analysts can focus on more **complex analysis support requests.**

Reviewer technical issues will be resolved **faster.**

Time will be spent on what **matters most.**

CARLA creates a partnership with humans

24/7 Assistance

Reviewers have the **flexibility** to receive support any time of day, any day of the week.

Growth Management

CARLA helps **manage the continuous growth** of support requests and responsibilities that the OCS Service Desk has been receiving.

Data Privacy

CARLA is locally hosted on the FDA Intranet, keeping sensitive data **private, safe, and secure** from data breaches and attacks.

Data Insights

Conversation logs are captured, compared against historical trends and analyzed to **identify patterns and solutions** for common reviewer questions.

Automation

CARLA can resolve Tier 0 & 1 requests **without human intervention**, increasing the efficiency of support requests resolved in a single day.

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