



arkcls

Enhance the Power of an Interpretation System using MATLAB®

17th November 2020

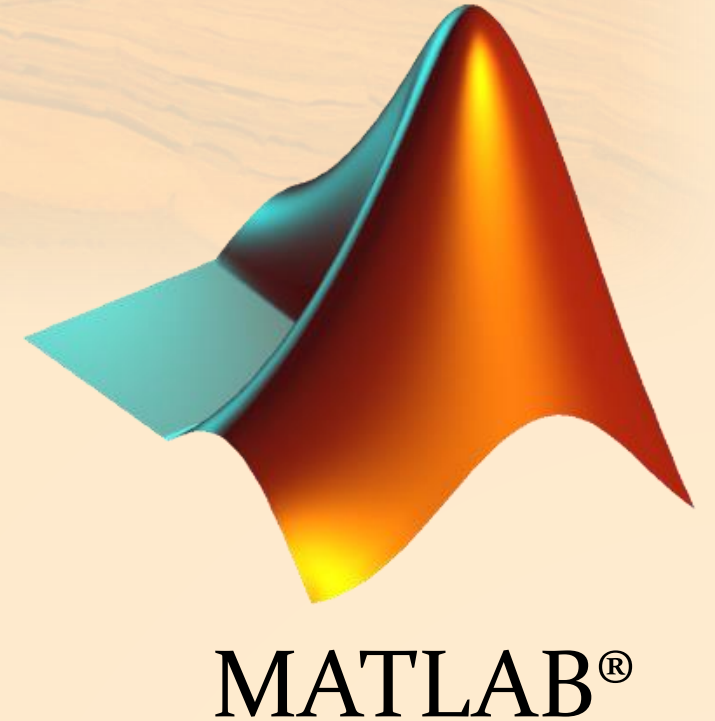
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Agenda

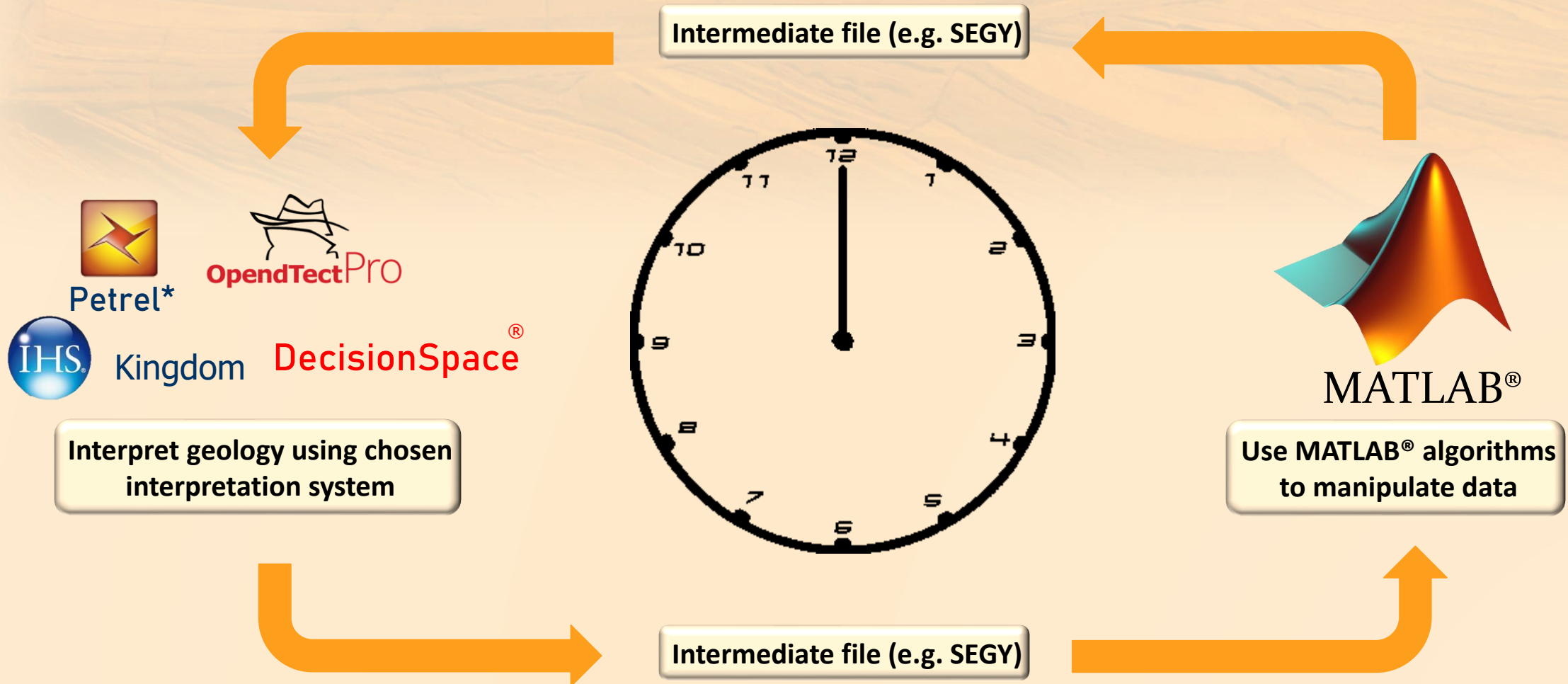
- ❖ Why we chose to use MATLAB®
- ❖ Workflow current and enhanced
- ❖ What is the GeoDataSync Framework (GDS-F)?
 - ❖ GDS-F Develop
 - ❖ Live demonstrations
 - ❖ GDS-F Deploy
- ❖ Our vision for 2021 and beyond
- ❖ GeoDataSync in the upstream sector
- ❖ Conclusions

Why MATLAB®?

- ❖ Great platform for geoscientist to prototype ideas
 - ❖ Provides a set of built-in functions
- ❖ Availability of third party add-on specific to our industry
- ❖ Platform allowed rapid development of our GeoDataSync Framework
- ❖ Provides an environment to demonstrate real time coding
- ❖ Established MATLAB community
- ❖ Can easily link with software libraries developed in other languages



Current MATLAB workflow in the E & P sector

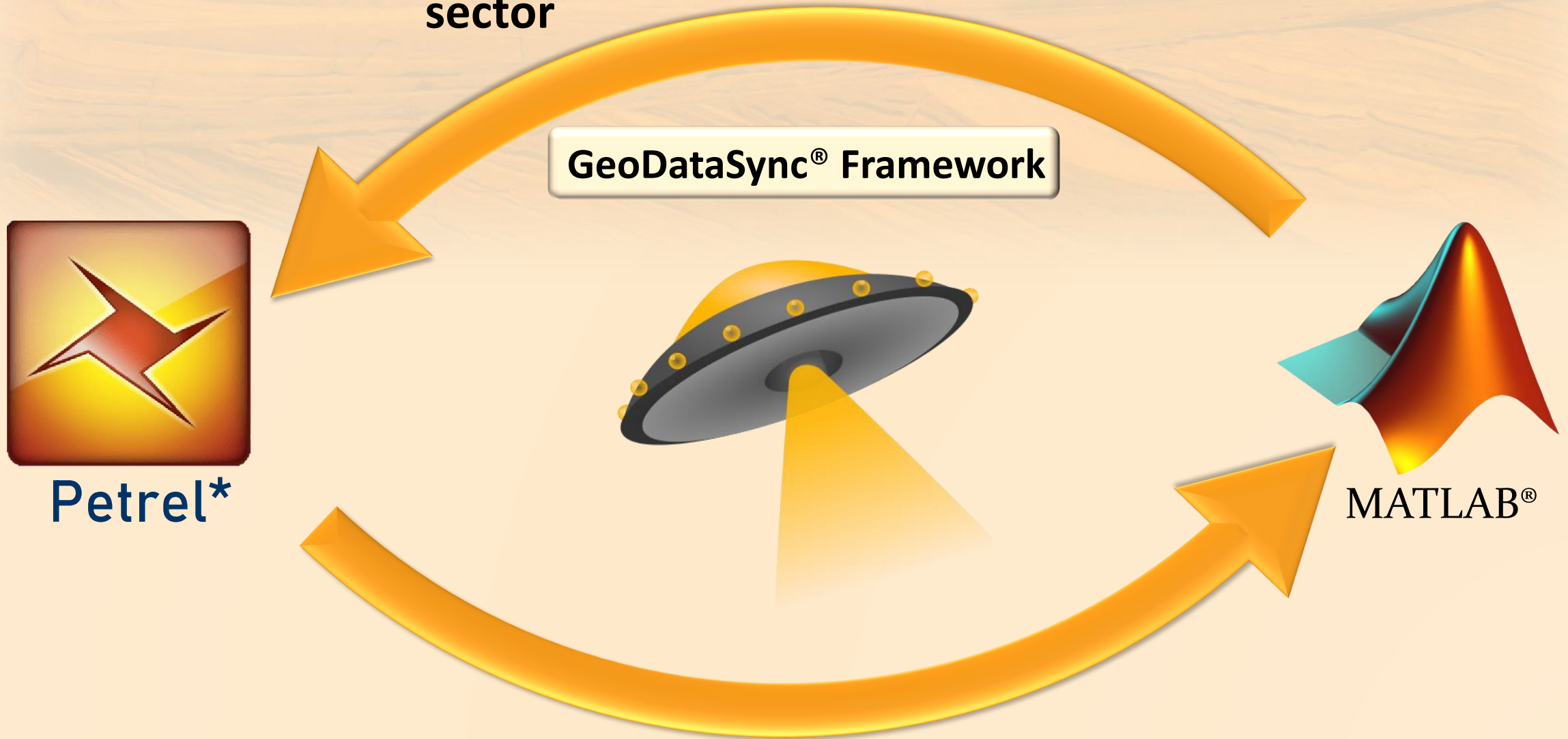


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Enhanced MATLAB workflow in the E & P sector

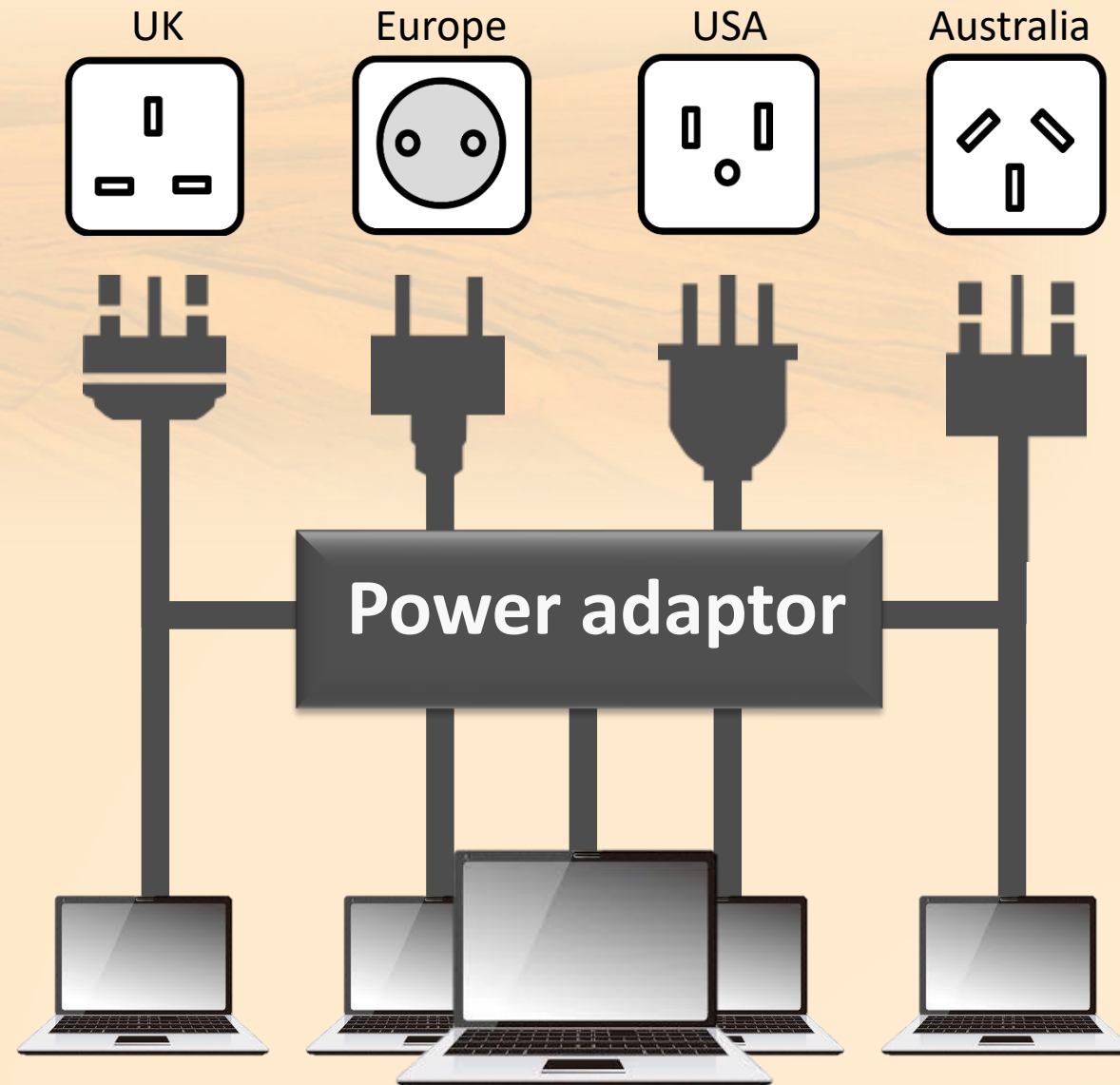


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What is the GeoDataSync Framework?

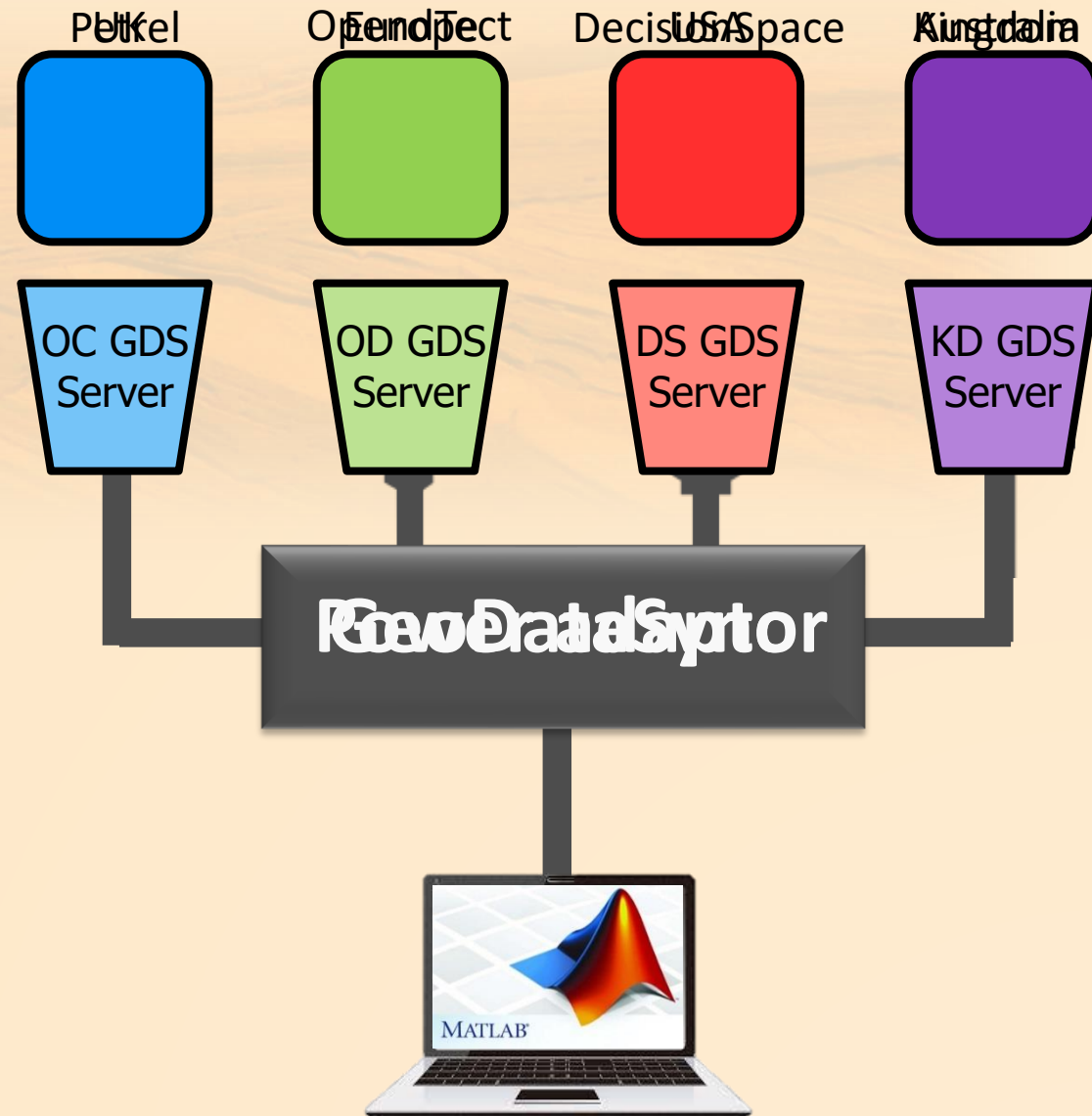
Utilises a Client-Server model

- ◆ Best explained using an analogy
- ◆ Imagine interpretation systems as plug sockets
- ◆ Imagine servers is plugs
- ◆ Imagine clients as laptops
- ◆ Would you buy a new laptop for every country?
- ◆ No - you would use a power adaptor instead



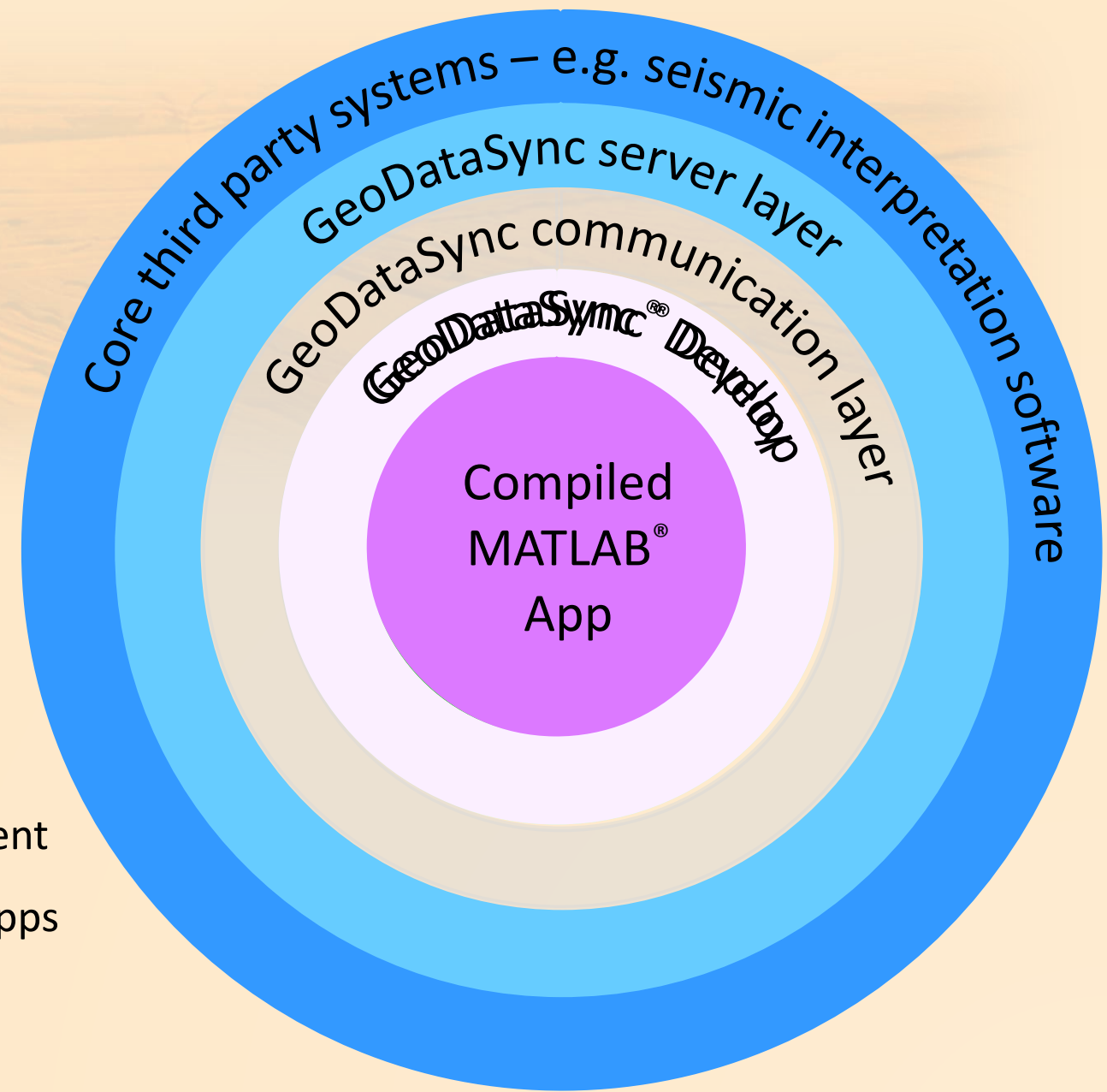
What is the GeoDataSync Framework?

- ❖ Our GeoDataSync® provides client/server framework
- ❖ Third party core Interpretation systems as power sockets
- ❖ GDS servers built for each interpretation system as plugs
- ❖ MATLAB® behaves as client



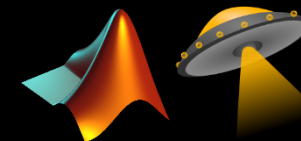
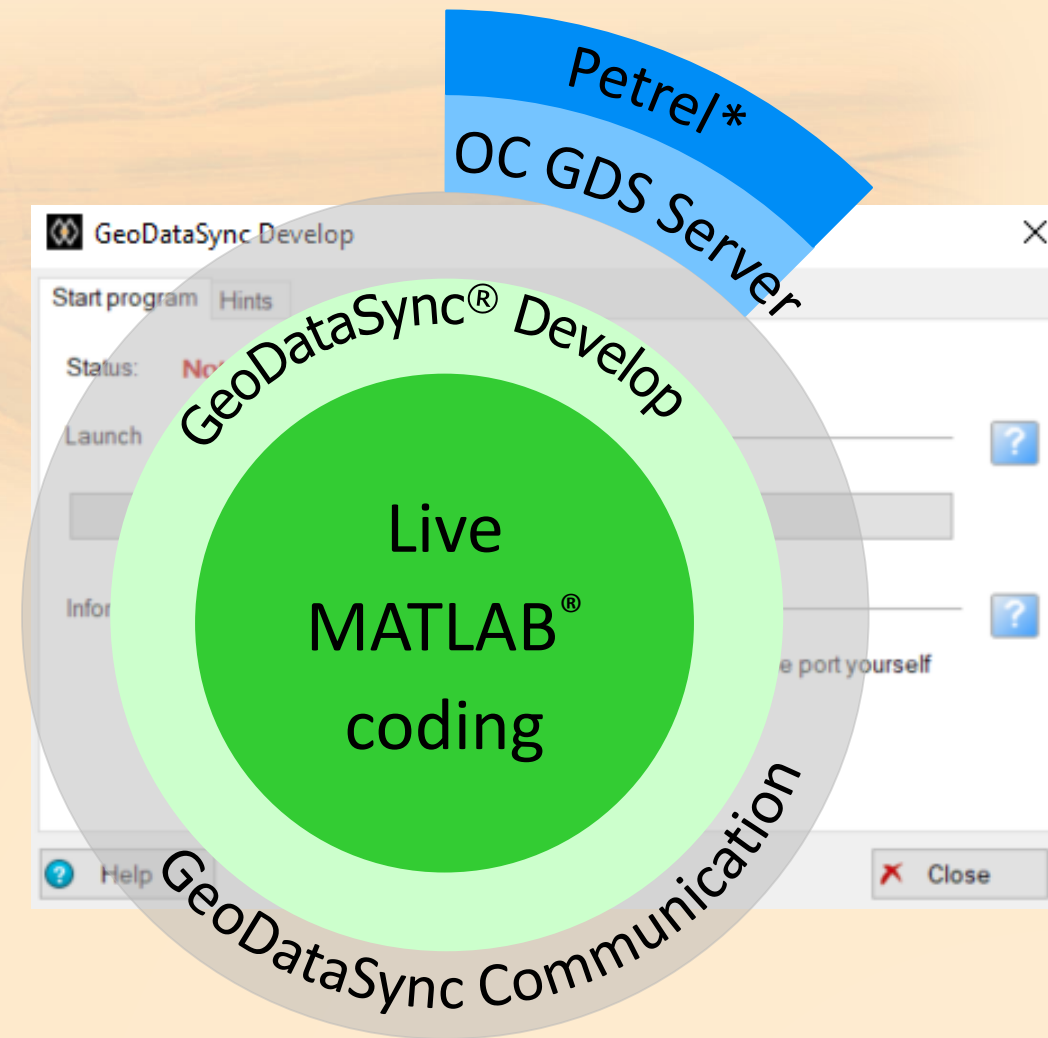
GeoDataSync Framework?

- ◆ Can be viewed as an onion model...
 - ◆ 1st (inner): Application
 - ◆ 2nd : GDS-F client layer
 - ◆ 3rd : GDS-F communication layer
 - ◆ 4th : GDS-F server layer
 - ◆ 5th (outer): Third party system
- ◆ Two variants:
 - ◆ GDS-F Develop: Live MATLAB coding environment
 - ◆ GDS-F Deploy: Distributed MATLAB compiled apps



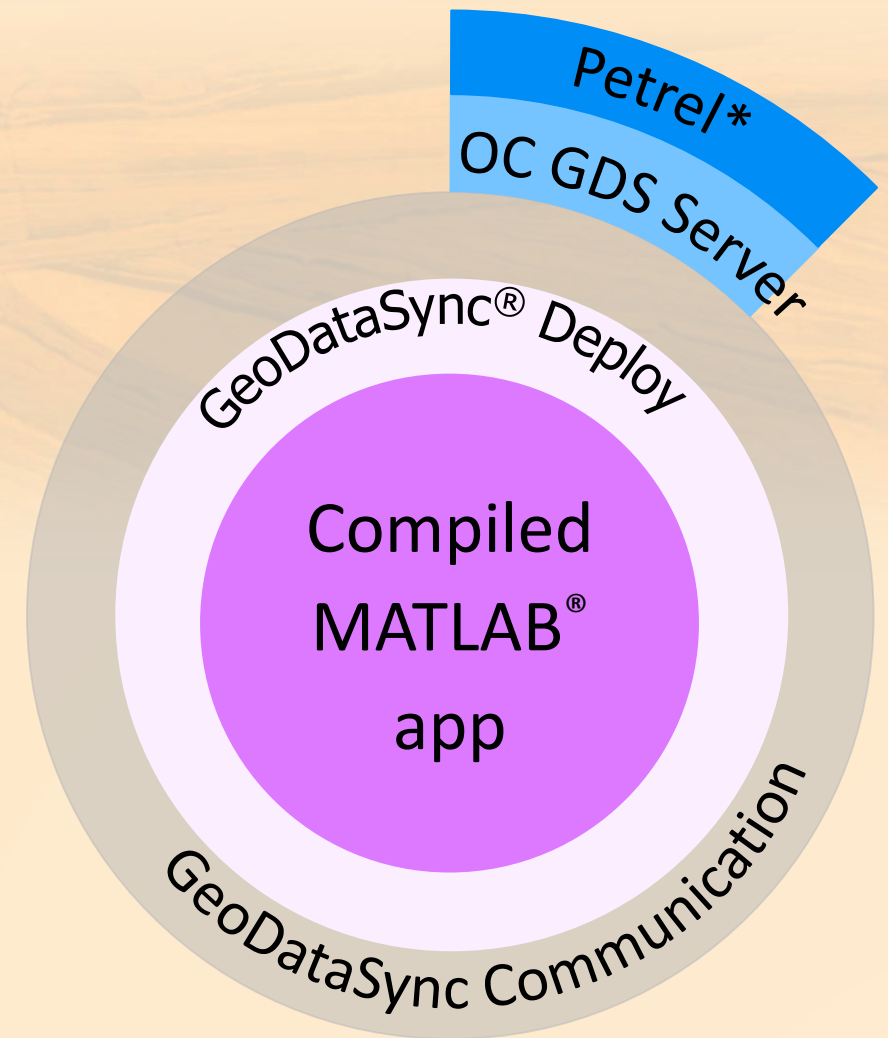
GeoDataSync Develop

- ❖ For experts within a client organisation to develop MATLAB® compiled plug-ins for Petrel
- ❖ Launch button in Petrel starts a GDS Server and provides a port number for MATLAB®
- ❖ MATLAB® functions allow a connection to Petrel to be established within a live real-time coding environment



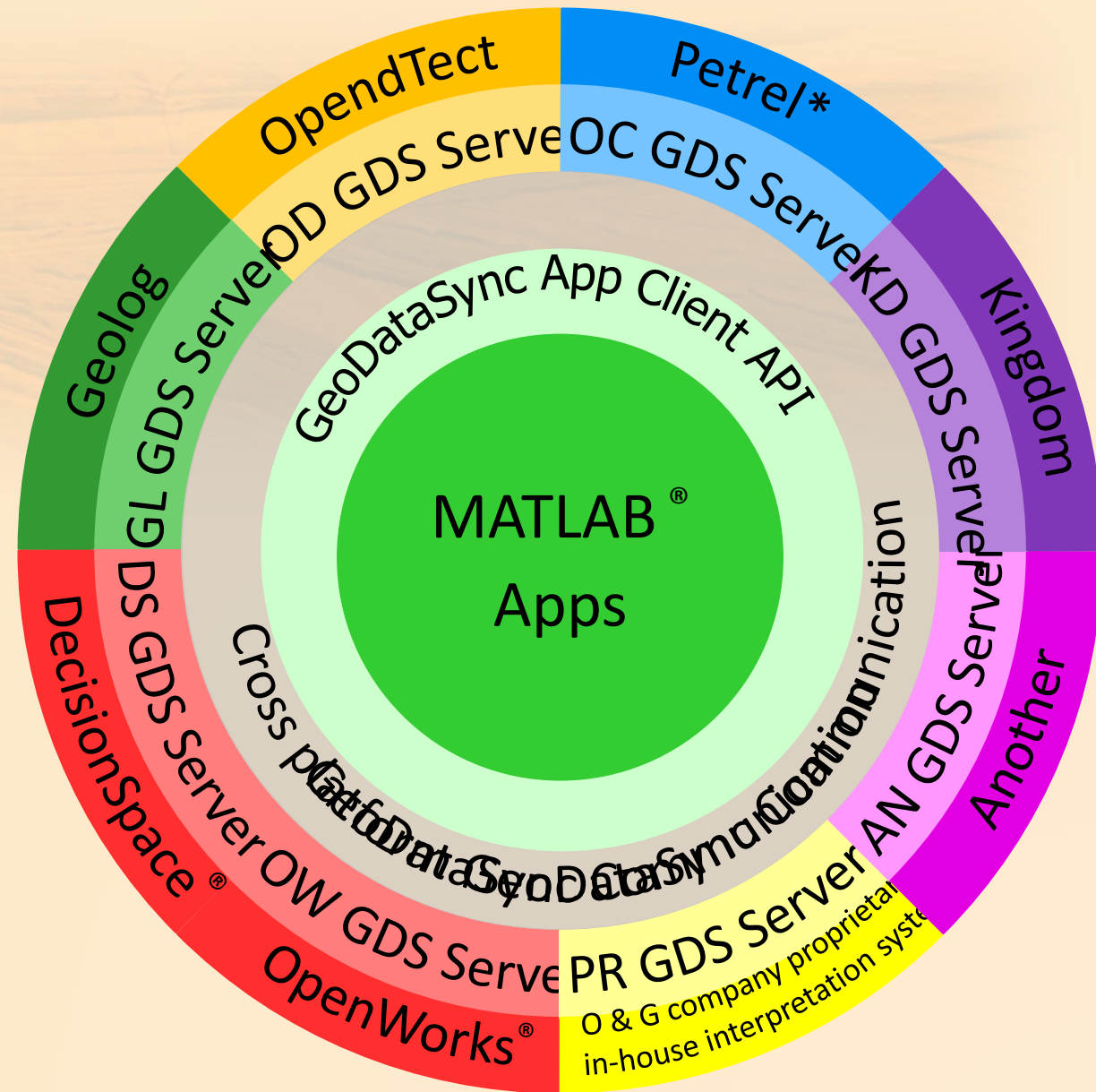
GeoDataSync Deploy

- ◆ Used to roll out a client's in house MATLAB® software to asset teams
 - ◆ Access data directly from Petrel
- ◆ Asset teams will not be able to modify the code
- ◆ GDS Develop licensees can continue developing plug-in and rolling out future enhancements



Our vision for 2021 and beyond

- ❖ In 2021 OpendTect server will be added
- ❖ Future MATLAB® app connection possibilities...
 - ❖ OpenWorks
 - ❖ Geolog
 - ❖ Oil company proprietary GDS-F servers
 - ❖ DecisionSpace
 - ❖ Kingdom
 - ❖ Other ...
- ❖ GDS-F will be cloud ready and cross platform



GeoDataSync Framework in the upstream sector



Exploration



Drilling



Production

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Conclusion

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- ❖ MATLAB provides easy to use environment to prototype and develop apps
- ❖ GeoDataSync Framework provides real time access between MATLAB and core E & P system
- ❖ Provides a step change in workflow efficiency
- ❖ Provides what-if tool with live E & P data
- ❖ Do more at reduces costs
- ❖ Using GDS-F Develop proprietary MATLAB apps can be developed by geoscientists or programmer
- ❖ In house proprietary MATLAB apps can be rolled out to asset teams using GDS-F Deploy
- ❖ MATLAB with GDS-F will allow third party software companies/consultants to develop connected apps quickly



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