



# Faster Study Start-Up

*How NLP is a Game Changer  
in Clinical Research*

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**Knowledge Sharing Series**

# Faster Study Start-Up – How NLP is a Game Changer in Clinical Research

*Natural Language Processing Simplifies Outdated RTSM System Design Process*

## What is NLP?

Natural language processing (NLP) is a field of study that focuses on the interactions between human language and computers. It sits at the intersection of computer science, artificial intelligence and computational linguistics. (Wikipedia). In other words, NLP allows computers to read, analyse and interpret human language.

The concept of NLP is not new, it actually has been around since the 1950s with Alan Turing's publication of "Computing Machinery and Intelligence" which proposed what is now called the Turing test as a criterion of intelligence. We see the healthcare industry, namely hospitals, adopt NLP technology to improve the accuracy of electronic healthcare records (EHRs). What we haven't seen, until now, is its application to clinical research to accelerate study start-up.

## NLP's Application to Clinical Research – Building RTSM Systems

Randomisation and Trial Supply Management (RTSM) systems (also can be referred to as interactive response technologies or IRT) are responsible for critical functions of a clinical trial, like dispensing drugs and randomising patients, with direct patient impact. The current process for designing these systems involve asking clinical study teams, who should be spending their time operationalising a clinical trial, to sift through hundreds of pages of complex technical requirements to design a study system. The result of this process is that systems are designed by clinical professionals that don't necessarily understand what they are approving. This ultimately leads to increased findings in user acceptance testing (UAT) and further edits to the system, adding additional time before system go-live.

What if NLP technology can disrupt this process? It can.

4G's RTSM utilises NLP technology to read and interpret written RTSM specifications, understand them, and build a deployable system in moments.

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*NLP is not magic...[it] has been around for years and is currently used in hospitals and in other industries.*

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Study teams no longer approve 200+ page specification documents they may not fully understand – they approve the actual system.

Instead of the customer receiving the system right before UAT, the full deployable system is delivered before the specs are even signed, and in some cases, in a demo before seeing the actual spec for the first time. The quality increases with each iteration of the system, and the customer has confidence that the system they are approving meets the needs of their trial.

This solution requires a change in people, process and technology. It challenges us as an industry to look at our SOPs, our governance structure and our choices of technology. NLP is not magic. If you remember, NLP has been around for years and is currently used in hospitals and in other industries. However, there is some reluctance in our industry to embrace new technology, especially when the **quality process needs to evolve in tandem**. The process for building and implementing clinical systems is outdated, so introducing this type of technology is most certainly a cultural shift as well and needs to be embraced by senior leadership and adjusted within SOPs.

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The benefits of NLP on the study start-up process, however, are undeniable:

Study manager's role in system build is simplified, allowing them to spend their time operationalising their trials

Spec sign-off to go-live has been completed in as little as 13 calendar days

Traditional 200+ page, complex specifications can be reduced to 20–30 pages of de-duped core, required information to ensure a quality study

UAT becomes a final check instead of a process to find and fix bugs

NLP is a game changer in clinical research because it simplifies and accelerates an outdated process – which in turn saves time, money and alleviates burden from your trial teams.

*So, are you ready to embrace the future of RTSM?*

To learn more, visit  
[www.4gclinical.eu/rtsm](http://www.4gclinical.eu/rtsm)

# About 4G Clinical

*We reduce the time it takes to commercialise vital medications by delivering validated, easily extendable RTSM capabilities to Pharma and CROs faster than anyone in the world.*

4G Clinical is driven by a single purpose: bring crucial medicines to those who need them, faster. 4G Clinical believes that the way to accelerate clinical research is by disrupting the way trials are executed. That's why we have revolutionised RTSM (randomisation and trial supply management) and supply forecasting capabilities and services from the ground up.

4G Clinical is committed to helping sponsors and CROs follow the science, wherever it may lead, as quickly and as safely as we can. While we will not discover the next novel compound in the lab, we are doing our part by leveraging our extensive experience and technological innovations to bring speed and agility to clinical trials.

## Prancer RTSM®

*Our 100% configurable and agile RTSM is built for the clinical trials of today and tomorrow.*

**4G's RTSM platform, Prancer RTSM®**, utilises natural language processing alongside integrated clinical supplies forecasting and management functionality to slash development timelines, increase operational efficiencies and offer exceptional quality.

Curious to hear more?  
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[Contact us today to start a conversation.](#)



Bringing crucial medicines to those who need them, *faster*.

[4gclinical.eu](http://4gclinical.eu)