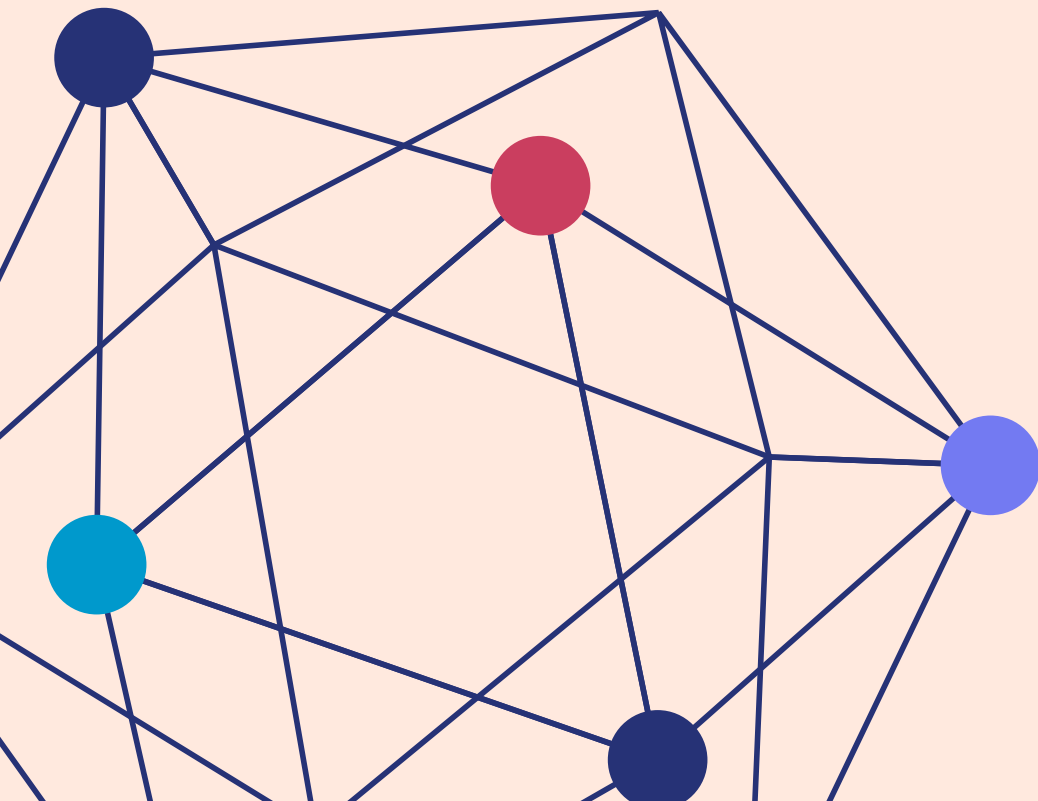




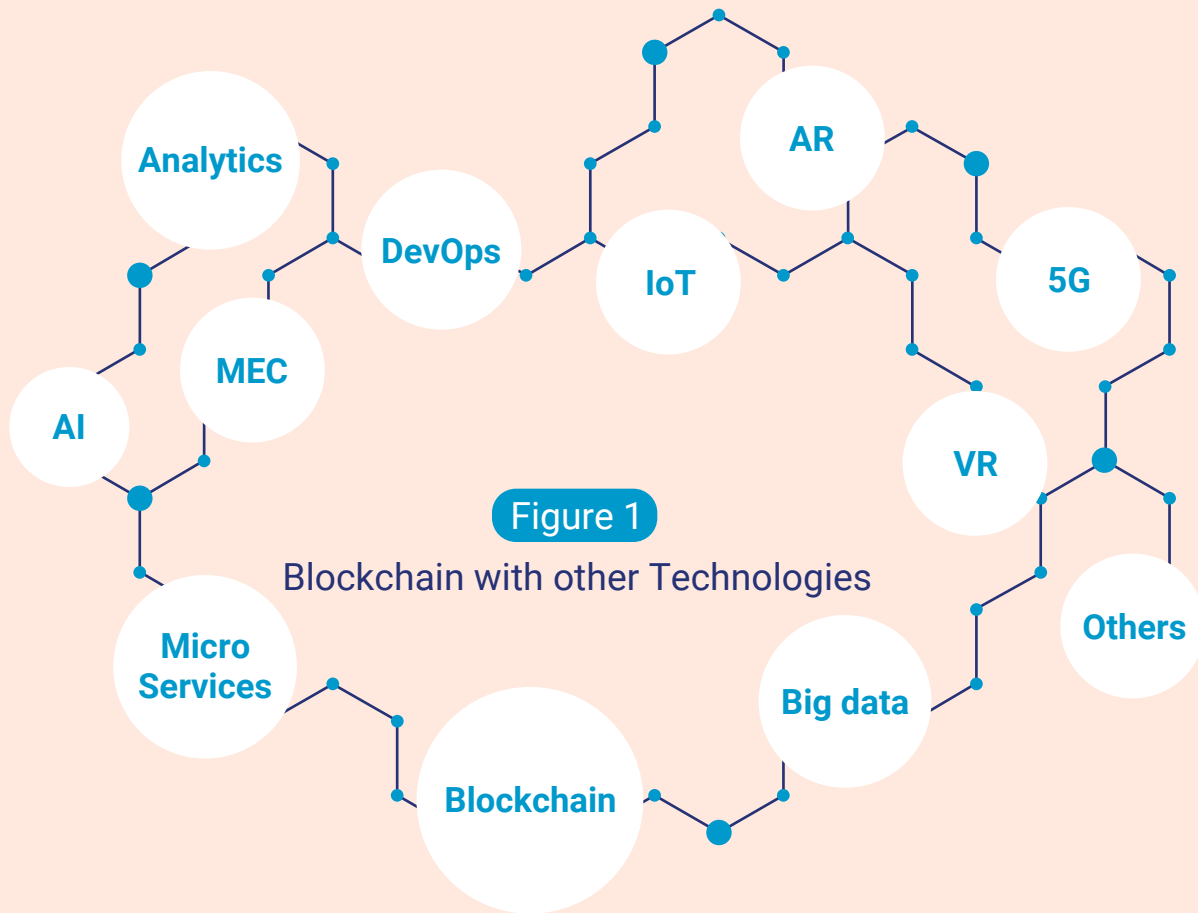
# **HYPERLEDGER**

## **Blockchain Testing as a Service with TestOnNeed**

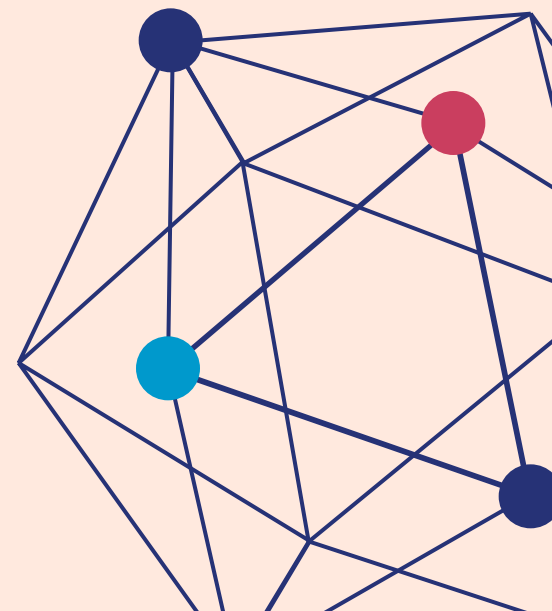
**Solution Specification Sheet**



Blockchain, the talk of the industry, is foreseen by many of the industry experts that it will do for transaction what the internet did for information. However similar to the internet, the promises made by blockchain can only be possible with assisting technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT), all of which is together forming the next generation of the internet for a variety of vertical industry use cases. The blockchain will provide the technology to securely perform and store transactions in a distributed network while others offer their benefits.



New and emerging technologies are increasing the complexity of the testing while budgets and technical resources are tight. Also, growing is the time required to stay abreast of these new technologies. The pressure to pass or even surpass testing for delivering products and solutions fast to beat the slow has never been higher. Worst of all is incurring high costs due to excessive failure found at later stages and even in live deployments. The reduction of the increased risk with quality testing is imperative to be relevant in the market and successful.



## Testoper to the Rescue

The solution to these challenges requires "Testoper" who is the future for delivering high-quality next-generation technology products and solutions. 'Testopers' are a trusted expert throughout your journey of Product Development Lifecycle (PDLC) -- unlike designers, developers, testers, DevOps and others who are involved in part of the PDLC. They are superior to others and are the partners that you would not regret having at hand. Testopers are the future of blockchain technology. And, they make it all happen by leveraging Test-driven development (TDD) with the open-source using an open-source testing ecosystem.

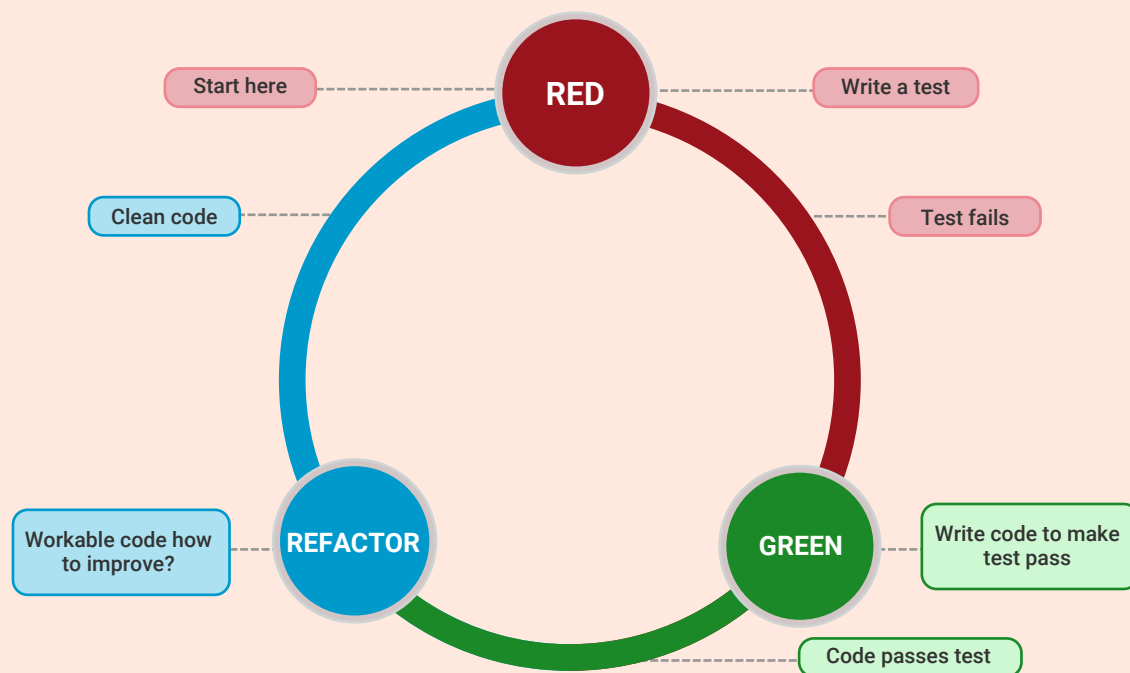


Figure 2 Test-driven development (TDD)

## Blockchain Testing as a Service (BTaaS)

Testing as a Service is an outsourcing model in which all activities related to manual testing (BTaaS - Manual), test automation (BTaaS - Automation), and Administration (BTaaS - DevOps) is performed by a third-party testing service provider with a team of Testopers. They must have specialized and expertized skill set in blockchain and its assisting technologies and products. BTaaS is also sometimes referred to as on-need and on-demand testing, automation, and DevOps. BTaaS may be your best opportunity to reduce CapEx, OpEx and improve return on investment (ROI) by shortening test cycle and improving efficiency. As a result, go-to-market fast to beat the slow.

## TestOnNeed BTaaS Ready-To-Go Solution

In this engagement model, TestOnNeed offers ready-to-go test plan with 350+ automated test cases. We dedicate a Tester to work with our customer in-house testing team for a month to test these ready-to-go test cases to deliver test results and recommendations. The scope of this BTaaS testing solution covers as applicable align to our customer deployment criteria:

1. **Installation testing** to verify successful installation of system software, blockchain network, and business network and applications. The following will be tested:

- System software installation, version, path, and OS dependency
- Installation and upgrade of blockchain network
- Blockchain infrastructure components such as orderer, peer, etc.
- Identities, policies, certificates, and MSP
- Installation and upgrade of business network and chain code
- Installation and upgrade of blockchain web, mobile, and desktop application
- Verification with sample blockchain network, business network, and application

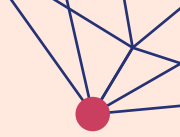


Figure 3

TestOnNeed BTaaS Ready-To-Go Solution

2. **Blockchain network Infrastructure testing** to validate the functionality and performance of the blockchain network and its different components. The following will be tested:

- Certificate authority and security
- Orderer, consensus and traffic performance with Kafka, and Solo
- Peer, endorsement, event and gossip protocol
- System Chain code, Ledger, LevelDB, CouchDB and private data
- Capability and service discovery, logging, scalability, and confidentiality
- Performance indicators such as success rate, throughput, and latency



3. **Business network and application testing** to characterize the functionality and of the business network and its different components. The following will be tested:

- Assets, participants, transaction logic, and its identities
- Application chain code lifecycle and error handling
- Query interaction with the ledger, world state, LevelDB, CouchDB and private data
- Access Control List, historian, event and publish models
- Web, mobile, and desktop application testing and interaction with chain code

4. **Performance benchmark testing** to benchmark the blockchain solutions with predefined use cases, and get a set of performance test results. The following will be tested:

- Success rate
- Transaction/Read throughput
- Transaction/Read latency(minimum, maximum, average, percentile)
- Access Control List, historian, event and publish models
- Resource consumption (CPU, Memory, Network IO,...)

TestOnNeed BTaaS Ready-To-Go Solution Ordering Information		
TON-BTaaS-RTG-INS	Blockchain TaaS ready-to-go solution to test installation (95 test cases)	4000 USD
TON-BTaaS-RTG-INF	Blockchain TaaS ready-to-go solution to test infrastructure (135 test cases)	7000 USD
TON-BTaaS-RTG-BN	Blockchain TaaS ready-to-go solution to test business network and application (45 test cases)	4000 USD
TON-BTaaS-RTG-PB	Blockchain TaaS ready-to-go solution to test for Performance Benchmarking (75 test cases)	5000 USD

The purchase of TestOnNeed BTaaS Ready-To-Go solution will come with the following deliverables:

- One offsite (offshore) dedicated Testoper per month
- TestLink, an open source test management tool, where we record all our blockchain test plan and test cases

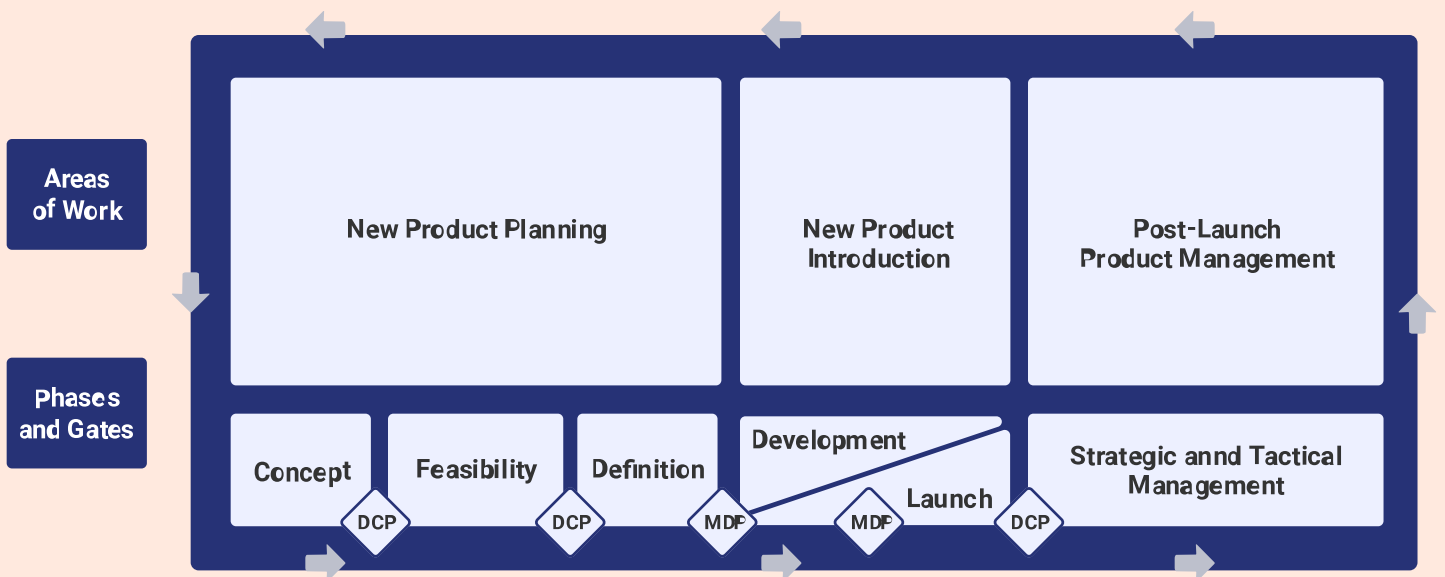


- One offsite (offshore) dedicated Testoper per month
- TestLink, an open source test management tool, where we record all our blockchain test plan and test cases
- Installation package for EveryBlockchain Test Suite re-using and extending the opensource test cases from Hyperledger Fabric, Composer, Caliper test framework, and additional in-house test cases
- YouTube videos and user manual that explain installation, configuration, and usage of the solution
- Licensing purchaser comply to is based on end-user license agreement (EULA)

## TestOnNeed BTaaS Turnkey Solution

In this engagement model, TestOnNeed offers to manage the complete product testing process, so our customers can focus on their core business. The scope of this BTaaS end-to-end turnkey testing solution includes:

**1. Test Design:** Our journey begins at the start of the Product Development Life Cycle (PDLC) from new product planning activities such as concept, feasibility, definition, and prototyping. We contribute and start with requirements to analyze, plan, design, script and create test cases using opensource design test tools such as Kantu, Postman, Parser, Editor, Detector, Hyperledger fabric, composer and caliper test framework.



**Figure 4** Product Development Life Cycle (PDLC)

DCP = Decision Check Point  
MDF = Major Decision Point

**2. Test Execution:** Continues with product development and introduction activities such as requirement analysis, and coding supported by Project Management Life

Cycle (PMLC) from initiation to closure. At this phase, we execute functional and load test cases using execution tools such as Selenium, Newman, Appium, Geny motion, iPhone Simulator, Winium, Hyperledger fabric, composer and caliper test framework.

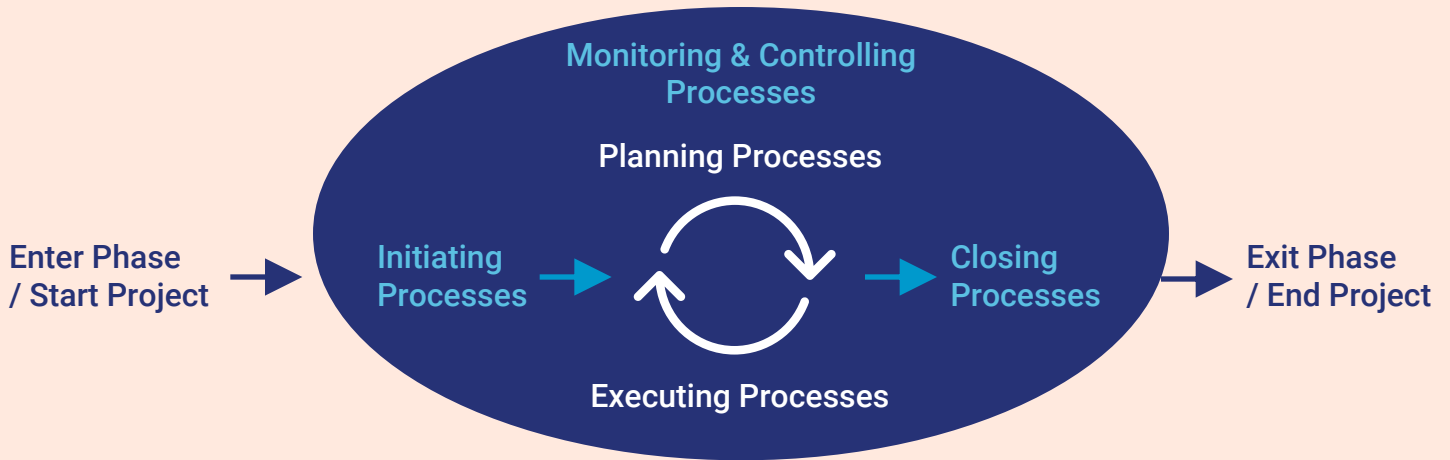


Figure 5 Project Management Life Cycle (PDLC)

### 3. Test Management:

Amplifies with high emphasis on the test case, and lab automation to improve the product development efficiency in the recurrent agile sprint execution phases of the PMLC. We put effort to automate and orchestrate all to schedule, execute, and manage test cases as well as test equipment using management tools such as Ride, and Jenkins.

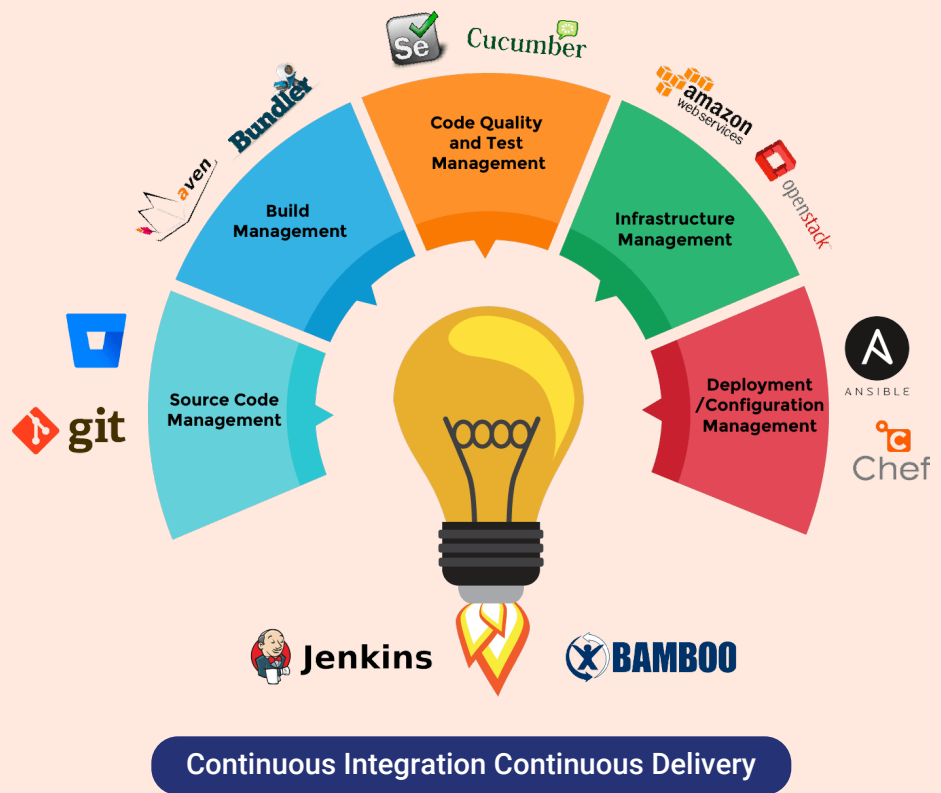
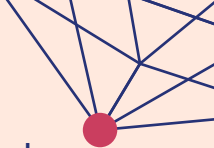


Figure 6 End-To-End Test Management and Analytics with DevOps

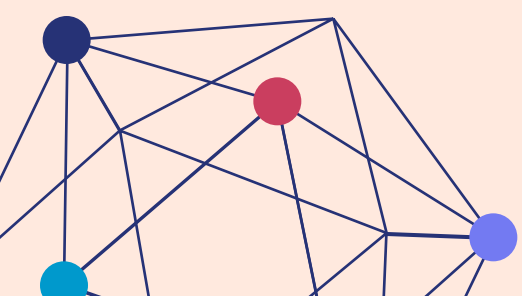


**4. Test Analytics:** Finally, partnership flourishes forever with product launch and post-launch activities such as continuous production deployment, continuous monitoring, maintenance and recovery supported by DevOps such as Ansible and Jenkins. We create meaningful insights into 2D and 3D graphs using tools such as Kibana, Elastic Search, and Logstash.

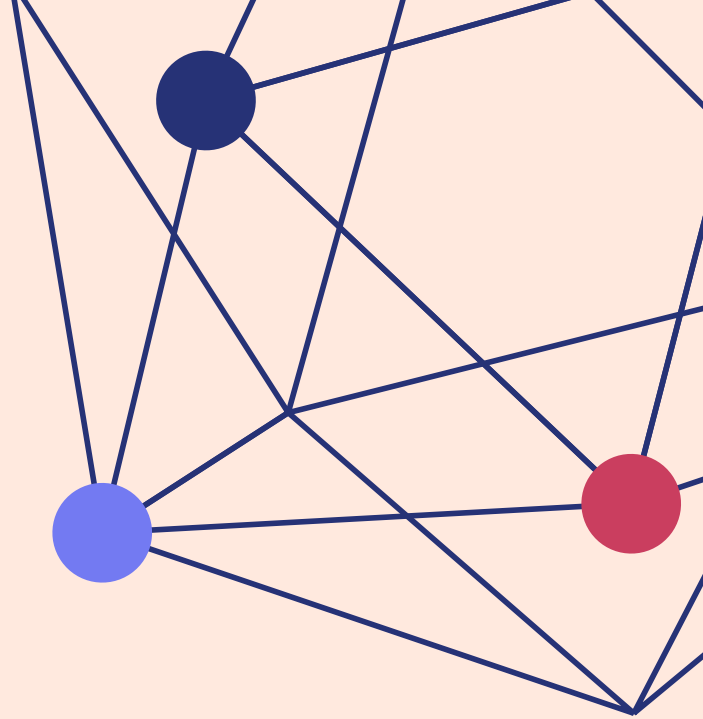
TestOnNeed BTaaS Turnkey Solution Ordering Information	
TON-BTaaS-Manual	Blockchain TaaS manual testing solution to test installation, infrastructure and applications
TON-BTaaS-Automation	Blockchain TaaS Automation testing solution to test installation, infrastructure and applications
TON-BTaaS-DevOps	Blockchain TaaS Administration solution for installation, monitoring and maintenance of infrastructure and applications

**TestOnNeed** offers flexible pricing based on the different type of engagement models as detailed below:

Basic	Pro	Ultimate
<b>\$50</b>	<b>\$40</b>	<b>\$25</b>
< 6 Months	< 12 Months	> 12 Months
50 USD Offshore	40 USD Offshore	25 USD Offshore
100 USD Onshore	90 USD Onshore	75 USD Onshore
Per Hour/Resource	Per Hour/Resource	Per Hour/Resource







## About TestOnNeed

Being efficient and fast is all about transformation and success is all about welcoming it. We at TestOnNeed live only to create flawless software application products on-demand. Our 'Testopers,' do this by testing, automation, and DevOps with open sources using an open source testing ecosystem.

We don't just test products; we make products better. We better the speed, scale, coverage, and quality of Blockchain, and assisting technologies such as Artificial Intelligence (AI), Internet of Thing (IoT), and Multi-Edge (Mobile) Edge Computing (MEC) software application products. We may be the best opportunity for your future business.

If you need additional information or have questions about our solutions or demo and purchase, please reach out to us at [sales@testonneed.com](mailto:sales@testonneed.com), and visit us to start your project at <https://testonneed.com>

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