



London
STOCK EXCHANGE

PUTTING YOUR SYSTEMS THROUGH THEIR PACES

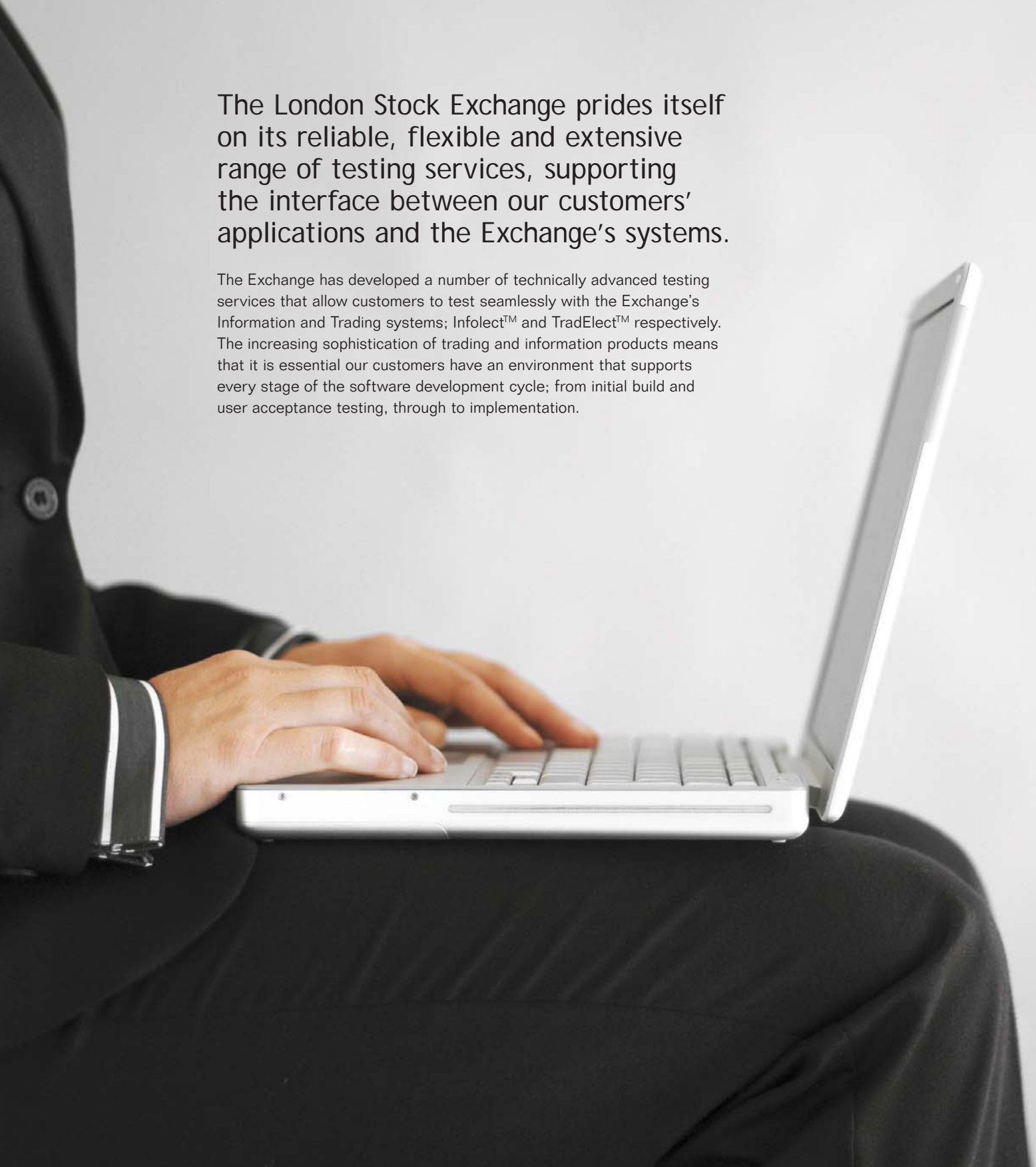
Customer Testing Services



Customer Testing Services

The London Stock Exchange prides itself on its reliable, flexible and extensive range of testing services, supporting the interface between our customers' applications and the Exchange's systems.

The Exchange has developed a number of technically advanced testing services that allow customers to test seamlessly with the Exchange's Information and Trading systems; Infolect™ and TradElect™ respectively. The increasing sophistication of trading and information products means that it is essential our customers have an environment that supports every stage of the software development cycle; from initial build and user acceptance testing, through to implementation.





Our testing services allow customers to:

- formally test the functional interface between a customer’s own application and the Exchange
- test against new functionality ahead of its introduction in to live service
- verify that system applications and infrastructures can support delivery of the Exchange’s market data
- train employees
- test trading strategies against an accurate and dynamic simulation of the Exchange’s systems
- test at weekends, in which customers can test against the Exchange’s production infrastructure
- performance test applications, hardware and infrastructure.

All of our testing services are supported by a comprehensive series of documents which provide detailed and thorough information on each.

Although predominantly aimed at software providers or customers developing their own in-house systems, our testing services are also invaluable to those customers who use applications provided by a third party.

Access to the Exchange’s various testing services is provided through Extranex, the Exchange’s managed communications service. For the complete range of services customers require a dedicated leased line, however, the Exchange also offers access to the Customer Development Service through VPN Developer – a low cost, internet based testing only connection.

Connection	Customer Development Service	Conformance Testing	High Volume Service	Participant Test Weekend	Order Book Simulator
Extranex VPN Developer	•	• ¹			N/A
All other Extranex connections	•	•	•	•	N/A

¹Trading only

Customer Development Service

The Customer Development Service (CDS) is the most comprehensive testing service from the Exchange. The CDS is a fully functioning simulation of the Exchange's production environment against which our customers can run their trading and information applications.

Market activity is determined by the interaction between customers on the service. Exchange tools ensure that there is background activity in selected market segments, whilst a number of 'scripted scenarios' allow our customers to follow pre defined market actions. Customer specific instruments are also available if interaction with other customers is not required.

All production segments are supported on the CDS and constituents are aligned regularly with the live service.

CDS sessions can be pre-booked and allow access to the service for a full trading day with extended hours. End to end testing between the CDS and the CREST trialling environment is also provided twice a year.

For those customers who test regularly or appreciate the convenience of uninterrupted access then a Continuous Access Service is offered as a cost effective and efficient means of testing.

Conformance Test Service

The Conformance Test Service is a service that supports mandatory testing as part of our software accreditation policy.

Tests are grouped into a number of 'cycles' each covering a particular aspect of functionality. Customers can opt to run through test cycles sequentially, or concentrate on a particular test cycle or cycles.

Conformance Testing sessions can be pre booked and last approximately half a day. All conformance tests are supported by a dedicated Customer Test Analyst.

Participant Test Weekends

Participant Test Weekend (PTW) testing is the most suitable service where live like performance is required. During a PTW the Exchange offers our customers the opportunity to test their trading and information systems in a production environment.

The service is designed where performance is the main driver for customer testing or if customers wish to test their own disaster recovery or other business continuity scenarios as well as office relocations, etc.

PTW sessions can be pre-booked and are scheduled on a regular basis throughout the year. Each PTW provides access during a Saturday for a shortened trading day.



High Volume Service

The High Volume Service (HVS) is a specialised testing service providing an environment in which our customers can test that their infrastructure supports market data delivered at peak throughput, without dropping messages.

This service ensures customers' systems are fully compatible with the Exchange's, and ensures that information delivery is supported in a high capacity environment. HVS is part of Conformance Testing but is also available as a 'stand alone' test.

This service broadcasts live data at a maximum rate across the data channels to which a customer subscribes. The Exchange will monitor the number of requests that a customer's system makes for missed messages.

High Volume Test sessions must be pre-booked and last approximately 90 minutes. All High Volume Testing is supported by a dedicated Customer Test Analyst.

Order Book Simulator

The Order Book Simulator (OBS) is a stand alone, configurable emulator of the Exchange's trading and information systems allowing customers to complete development and testing without a direct connection.

The OBS provides a flexible, fully configurable environment for customers to develop, regression test

and stress test their applications. The dynamic User Interface provides customers with an insight into the workings of the system, providing greater transparency for customers developing to the Exchange's interfaces.

The OBS is offered on an annual subscription basis and is fully supported by the Exchange.

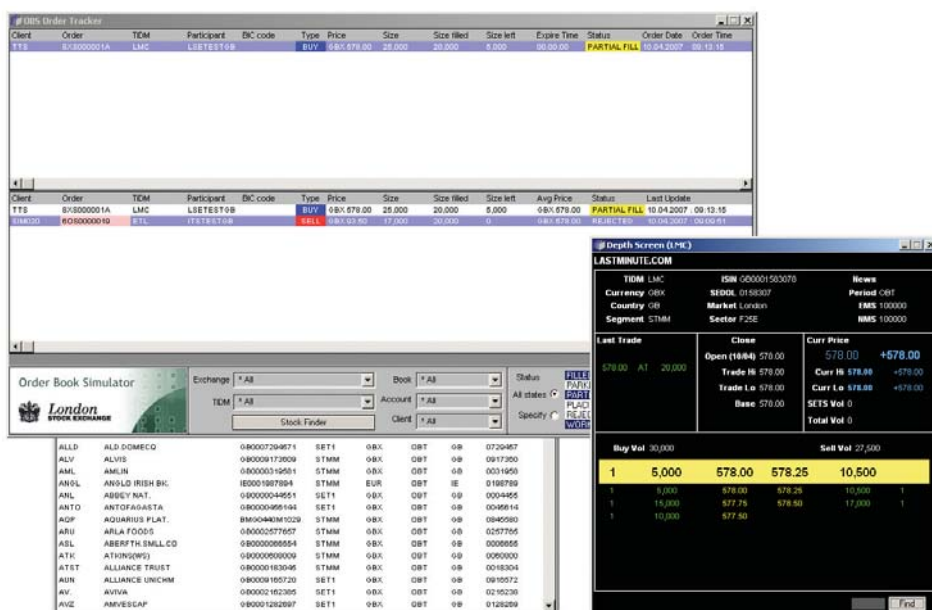


Image 1 – Order Book Simulator Interface

Meeting Customers' Requirements

Requirement	Customer Development Service	Conformance Testing	High Volume Service	Participant Test Weekend	Order Book Simulator
Mandatory testing		•	•		
Benchmarking		•	•		•
Development	•	•	•		•
Regression testing	•	•	•		•
Infrastructure/ network testing			•		
Training	•			•	•
DR testing				•	
Rollout				•	

Mandatory testing: New customers, customers developing their own solutions and customers using third party solutions which have not been accredited are required to carry out compulsory testing.

Benchmarking: Relative performance measurement/evaluation.

Development: Testing a new application feature or enhancement.

Regression testing: Testing that there is no adverse functional impact following implementation of a new feature or enhancement.

Infrastructure/network testing: Testing that a customer's infrastructure and network can support delivery of market data without issues.

Training: Using the test environment to train staff or test new trading strategies.

DR testing: Testing the fail over from a customer's primary system or site to a secondary backup system or site.

Rollout: Migration to a new application/hardware or implementation of a new feature or enhancement.



The features and benefits of the Exchange's Customer Testing Services

Feature	Benefits	Customer Development Service	Conformance Testing	High Volume Service	Participant Test Weekend	Order Book Simulator
Supports trading	Full trading functionality supported	•	•		•	•
Supports information	Extensive data content	•	•	•	•	•
All markets supported	Identical market structure to live	•			•	
Live like constituents	Realistic Instruments regularly aligned with live	•			N/A	
Reserved instruments	Flexibility to test without customer impact	•				•
Suitable for performance testing	High capacity environment with response times identical to live			•	•	
Guaranteed interaction	Realistic Market Activity	•				
24 hour availability	Flexibility to test at any time					•

If you wish to subscribe or require more information on any of the Exchange's Customer Testing Services, please contact Information Sales on +44 (0)20 7797 3211, STX 33211 or email infosales@londonstockexchange.com



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