



# CCG Auto-Mass Cancel on Disconnect Technical Specifications for Warrants Liquidity Provider customers: new protocols (UTP-Direct and UTP-FIX 4.2)

January 2010 – V 1.0



### VERSION HISTORY

<b>Version Number</b>	<b>Date</b>	<b>Source Documents Used</b>	<b>Reasons for issuing a New Version</b>	<b>Sections changed</b>
V 1.0	January 2010			-



## INTRODUCTION

### ***Purpose:***

This document provides a technical overview of the CCG auto-mass cancel on disconnect feature. It describes message kinematics for customer applications.

### ***Scope***

The scope of this document covers CCG target protocols: UTP-Direct and UTP-FIX 4.2 for order entry services

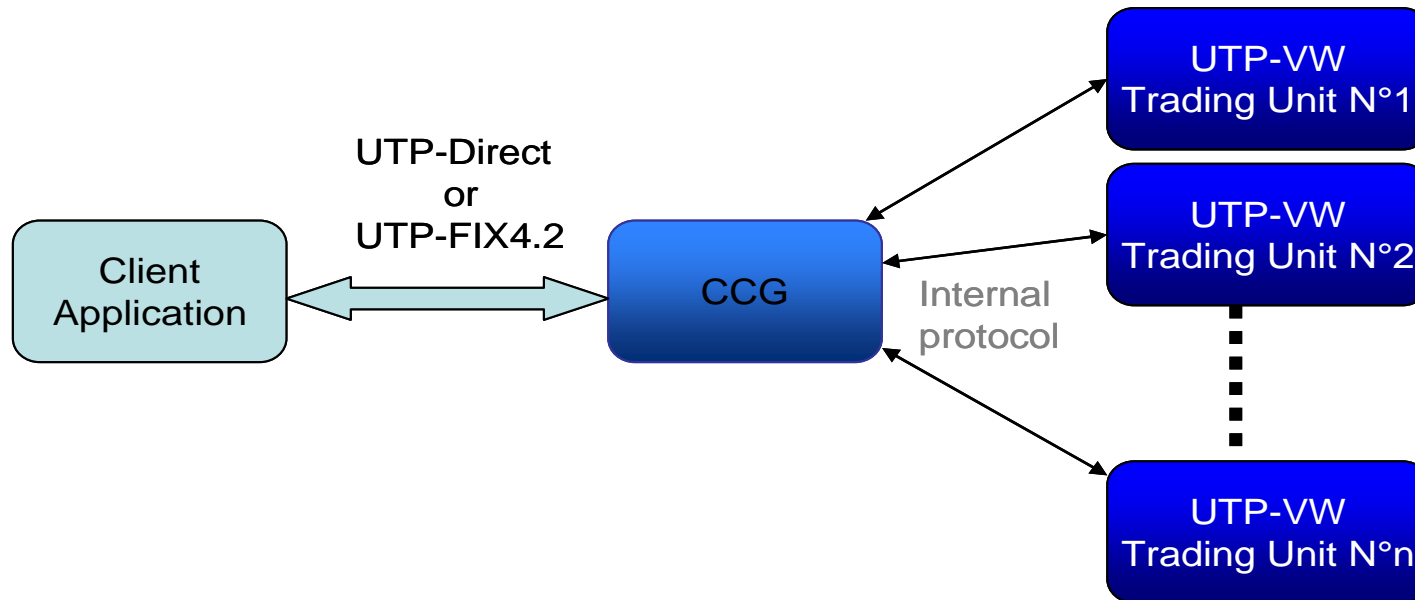
**The scope of this document covers the auto-mass cancel on disconnect facility for Warrants liquidity provider customers.**

Note: At a later stage, the auto-mass cancel on disconnect facility will also be available for Warrants brokers, UTP-Regulated Markets (UTP-RM) and NYSE Arca Europe customers



## ARCHITECTURE OVERVIEW

CCG – which stands for Common Customer Gateway – is the equipment hosting the customer UTP-Direct or UTP-FIX 4.2 interface. UTP-Direct and UTP-FIX 4.2 interfaces use TCP/IP sockets. Each client connection sends messages to its assigned IP and port. The CCG then routes the messages to the appropriate VW engine trading engine unit (cf note below)





## AUTO MASS CANCEL ON DISCONNECT FEATURE DESCRIPTION

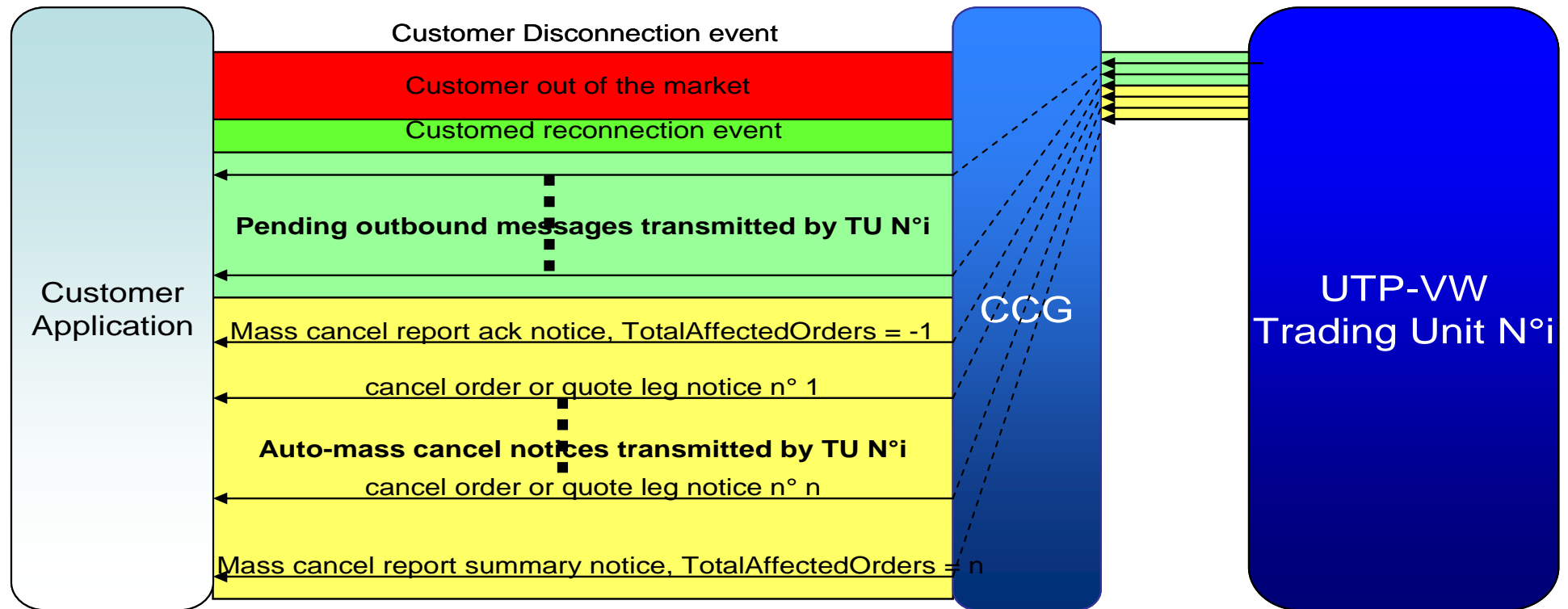
- At the client's request, a CCG session can be configured to automatically cancel all live quotes and orders when a session disconnects.
- Under the current implementation system (cf note below), when a disconnection occurs, the CCG will wait for a period of 1 second if a session fails to successfully reconnect before the auto-mass cancel service kicks in (cf note below).
- As a result of the auto-mass cancel function, a message K (r in FIX 4.2) (Ack. and Summarization) pair is sent by each trading engine unit to the customer application, regardless of whether there are quotes and/or orders currently live on the trading engine unit. As such, customers will receive as many message K pairs as number of trading engine units. Basically, the number of trading engine units is currently around 10 trading engine units.
- If there are quotes and/or orders currently live, a message 4 (8 in FIX 4.2) (Order Killed) is returned for each quote side or order eliminated. These messages are encapsulated within the message K (r in FIX 4.2) pair for each trading engine unit.
- Note: in the next auto-mass cancel on disconnect feature version, CCG will immediately cancel orders when disconnected.



# AUTO-MASS CANCEL ON DISCONNECT KINEMATICS

The paragraph below provides an illustrative diagram of protocol and data flow kinematics following a disconnection:

## Auto-mass cancel messages kinematics : example of one trading unit





The previous diagram illustrates message flow transmitted by each trading engine unit.

The triggering event is the disconnection of the client session following socket loss or lack of heartbeat. Please note that normal customer initiated logoff will not activate a triggering event on FIX 4.2.

When the customer reconnects, the client session will receive from each trading engine unit the following sequence (cf note below):

- any pending outbound messages generated prior to the CCG auto-mass cancel on disconnect event: ack, fill ... notice.
- one acknowledge message K (r in FIX 4.2) (with OrderId = -999 and TotalAffectedOrders=-1) from each trading engine unit.
- a message 4 (8 in FIX 4.2) « Order killed » notice for each order eliminated or quote side
- one summarizing message (r in FIX 4.2) (with OrderId = -999 and TotalAffectedOrders= number of Quotes side or Orders eliminated).

Note: even though each trading engine unit transmits messages in the sequence described above, the overall message flow transmission among trading engine units is parallelized. As a result, customers may receive simultaneously messages out of sequence as they are coming from different trading engine units.



## AUTO-CANCEL ON DISCONNECT FACILITY LIMITATION

- This feature does not guarantee that all quotes and orders will be successfully cancelled. It is possible that the automatic cancellation request may fail due to Exchange system problems, resulting in some (or all) quotes and orders remaining live and subject to execution.
- It is also possible that trades may happen near the time the customer session disconnects, and such trades will not be reported to the customer until he reconnects or until he liaises with the Cash Market Operations (CMO) Desk.
- This feature aims to help clients in emergency situations. **Therefore, clients must not rely upon this automatic cancellation as normal business practice or to prevent liability of execution. This feature is also not a substitute for contacting the CMO Desk to verify that all quotes and orders are indeed cancelled and that the firm has received all trades.**