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**Natural gas — Online gas
chromatograph for upstream area**

*Gaz naturels — Chromatographe en phase gazeuse en ligne pour
zone amont*





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Foreword

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The committee responsible for this document is ISO/TC 193, *Natural gas*, Subcommittee SC 3, *Upstream area*.

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Introduction

Online Gas Chromatograph (GC) is widely used to determine hydrocarbon components in natural gas because of its “Real time” measurement and ease of use. It has become a powerful tool for both custody transfer and upstream process gas monitoring. Especially for the custody transfer which the calorific value and others gas properties such as, relative density, compressibility factor, etc. are needed for energy determination. Therefore, accuracy and reliability of the equipment are crucial.

With proper maintenance and handling, GC can provide an accurate result with a minimum manpower as it analyzes and provides results continuously. With technology today, the unit can do auto-calibration, alarm setting, diagnostic, troubleshooting and configuring through Human Machine Interface (HMI). Its outputs can be linked directly with Flow computer, Distributed Control System (DCS) or any remote personal computer (PC).

The Natural Gas in upstream petroleum industry is normally wet. Then this Technical Report provides recommended application to handling GC focus on design, selection, operation, maintenance and verification of GC and its peripheral. The purpose is to provide the whole process to proper handling the GC until getting the accurate and reliable results. It is also included the sampling system to get the representative sample, data verification, alarm, diagnostic and troubleshooting including how to deal with the data in case of being used for custody transfer purpose. Some acceptance criteria are also identified in this paper based on our historical record and performance of the equipment.