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SOA Service Specification Document

HTI eu_ics2_t2c - ICS2 STI

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¹ Action: I=Insert R=Replace

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1 INTRODUCTION

1.1 DOCUMENT PURPOSE

This service specification document is used to document the details of the data and functionality provided by the Trader Interface (service provider) to the EO Systems (service consumers). It gives the service consumers information such as the service contract or orchestration logic. It gives service providers the information necessary for implementing the service in a consistent and interoperable way.

The present document describes the 'eu_ics2_t2c' service where "t2c" stands for "Trader to Customs". As defined in the Interface Control Document [R03], this specific service is not exposed as a web service as understood in the context of the TATAFng guidelines as a SOAP web service but as a service implemented in the business-to-business protocol defined by the eDelivery AS4 specifications (an open standard for the secure and payload-agnostic exchange of Business-to-business documents using under the hood SOAP web services). It must be read in that context, deviating from the standard content of the service specification document describing a SOAP web service as such. It offers actions covering the communication from the Economic Operator system to the Trader Interface application for the following business processes:

1. L4-ICS2-01 Register filing;
2. L4-ICS2-03-01 Send referral;
3. L4-ICS2-04 Process arrival of means of transport;
4. L4-ICS2-07 Amend ENS filing;
5. L4-ICS2-08 Invalidate filing;
6. L4-ICS2-13 Consult ENS.

These business processes are described in the related L4 BPM specifications [R01].

1.2 TARGET AUDIENCE

This document is addressed to the teams responsible for the service consumer application which is, in this case, the Economic Operator system.

It is also addressed to parties involved on the service provider side (Shared and National Trader Interface implementations) such as the development team, enabling a solution designer to determine the capabilities and characteristics of the service, matching both functional and non-functional requirements.

The target audience for this document includes:

- DG TAXUD project team;
- Contractors of DG TAXUD involved:
 - SOFTDEV (Development contractor);
 - ITSM3 INT (Integration contractor);
 - ITSM3 OPS (Operations contractor);
 - ITSM3 TES (TES contractor);
 - QA4 (Quality Assurance contractor);
- MS Implementing NTI;

- EO integrating system to system with STI or an NTI.

1.3 SCOPE

This document includes the specifications of the ICS2 eu_ics2_t2c service and the capabilities realised by its actions.

The invocation of an action of this service will trigger the execution of the corresponding tasks of the ENS Filling Lifecycle business process. These tasks and the related business rules are described in detail in the related L4 BPM [R01] and the Business Rules document [R04]. For each action offered by this service, this document provides:

- Enumeration of the business process steps realised by the action;
- High-level specific functional or non-functional aspects of the internal processes implemented by the action but not included in the BPM;
- Post-conditions describing the possible outcomes of the service action.

This document provides a functional description of the service actions. The technical implementation of these actions is out of scope.

1.4 STRUCTURE

This document is organised as follows:

- **Chapter 1 – Introduction:** describes the scope and the objectives of the document;
- **Chapter 2 – Service Description:** provides general information, classification and a list of consumers for the current service;
- **Chapter 3 – Service Contract:** provides all the service actions and the usage terms;
- **Chapter 4 – Service Orchestration Logic:** provides the orchestration logic for each service action;
- **Annex: Supported Actions per STI Release :** provides supported actions by the service for each release.

1.5 REFERENCE DOCUMENTS

Ref.	Title	Reference	Version	Date
R01	ICS2 Business Process Description	ICS2-CFSS-BPML4 Process Description	1.16 2.00 ²	30/07/2021 30/07/2021
R02	Technical Service Contract Document	CD3-ICS2-STI-TSC	N/A	20/07/2021
R03	ICS2 Interface Control Document	ICS2-HTI-ICD	3.10	22/12/2021
R04	ICS2-Business Rules Dictionary	ICS2-Business Rules Dictionary	2.0.0	30/07/2021
R05	ICS2 Architecture Overview	CD3-ICS2-AO	3.20	17/11/2021

Table 1: Reference documents

² In case 2 versions are shown, they are applicable for release 1 and release 2/3 respectively.

1.6 APPLICABLE DOCUMENTS

Ref.	Title	Reference	Version	Date
A01	SOFT-DEV Framework Contract	TAXUD/2021/CC/162	N/A	24/06/2021
A02	Specific Contract 01	TAXUD/2021/DE/173	N/A	07/09/2021
A03	CUST-DEV3 Framework Quality Plan	CD3-FQP	1.00	30/04/2015

Table 2: Applicable documents

1.7 ABBREVIATIONS & ACRONYMS

For a better understanding of the present document, the following table provides a list of the principal abbreviations and acronyms used. See also the ‘list of acronyms’ on TEMPO.

Abbreviation/Acronym	Definition
AS4	Applicability Statement 4
BAS	Business Activity Service
BPM	Business Process Model
CR	Common Repository
CUST-DEV3	Customs Development Contractor 3
DG TAXUD	Directorate General for Taxation and Customs Union
ENS	Entry Summary Declaration
EO	Economic Operator
HRCM	High Risk Cargo and Mail
ICS2	Import Control System 2
MEP	Message Exchange Pattern
MRN	Master Reference Number
MS	Member State
SSD	Service Specification Document
SOAP	Simple Object Access Protocol
SOFT-DEV	Development, Maintenance and Support of Customs and Taxation Information Systems
STI	Shared Trader Interface
TATAFng	Tariff Application Technical Architecture and Framework new generation
T2C	Trader to Customs
TI	Trader Interface
UUM&DS	Uniform User Management & Digital Signatures

Table 3: Abbreviations and acronyms

1.8 DEFINITIONS

For a better understanding of the present document, the following table provides a list of the principal terms used. See also the ‘glossary’ on TEMPO.

Term	Definition
Business Activity Service	Business activity services represent atomic business activities. They might represent simple activities like calculations as well as integration logic.

Table 4: Definitions

2 SERVICE DESCRIPTION

2.1 SERVICE INFORMATION

Service Attributes	Values
ID	<i>ICS2_SBN_BAS</i>
Name	<i>eu_ics2_t2c</i>
Description	<p><i>The present document describes the ‘eu_ics2_t2c’ service where “t2c” stands for “Trader to Customs”. As defined in the HTI Interface Control Document [R03], this specific service is not exposed as a web service but as a service implemented in the business-to-business protocol defined by the eDelivery AS4 specifications.</i></p> <p><i>The eu_ics2_c2t service is responsible for providing functionalities related to the reception of information from Economic Operators by ICS2 Trader Interface in the form of Information Exchange messages.</i></p> <p><i>The service interface is based upon the One-Way Message Exchange Pattern (MEP) and is exposed as services implemented in the business-to-business protocol defined by the eDelivery AS4 specifications [R03]. As defined in the AS4 specifications, signal messages are provided as synchronous responses to action invocation for:</i></p> <ul style="list-style-type: none"> <i>• acknowledgement of successfully processed message;</i> <i>• processing error.</i> <p><i>However, no synchronous output is defined as business responses for the service actions. On invocation, the service actions queue the incoming message requests which are subsequently executed asynchronously.</i></p>
Type	<i>Business Activity Service</i>
Version	<i>1.0.0</i>
Status	<i>Planned</i>
Owner	<i>DG TAXUD</i>
Date on Production	<i>N/A</i>

Table 5: Service Information

3 SERVICE CONTRACT

3.1 SERVICE INTERFACE SPECIFICATION

3.1.1 IE3Fxx

Action Attributes	Values
Name	<i>IE3Fxx, where 'xx' stands for the ID of the filing type which is comprised in between 10 and 51.</i>
Description	<p>Realised BPMs: L4-ICS2-01 – Register filing.</p> <p>Triggered Task/Event: E-01-01 - ENS filing received event.</p> <p>High level description of the tasks realised by the action after the reception of an ENS Filing Message:</p> <ol style="list-style-type: none"> Semantic and syntactic validation is performed on the received message; The ENS Filing is registered and a MRN is assigned to it; (NOT IN BPM) The IE4Fxx message is built based on the received message (IE3Fxx message); The ENS Filing (IE4Fxx message) is submitted to the CR application.
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<p><i>This action receives the message IE3Fxx as payload.</i></p> <p><i>Details on the message are available in the Technical Service Contract Document [R02].</i></p>
Post-conditions	<p><i>The possible post-conditions are the following:</i></p> <ol style="list-style-type: none"> <i>An error has been identified during the validation and an error notification is submitted to the EO system (T-01-06 - Notify Error task). The ENS filing is rejected (E-01-03 - ENS filing rejected event).</i> <i>The validation succeeded and the ENS filing is submitted to the ICS2 Common Repository Application (T-01-03 - Submit registered ENS filing task).</i>

Table 6: Specification of IE3F32

The available registration Actions are:

- | | | | |
|----------|----------|----------|----------|
| • IE3F10 | • IE3F20 | • IE3F28 | • IE3F41 |
| • IE3F11 | • IE3F21 | • IE3F29 | • IE3F42 |
| • IE3F12 | • IE3F22 | • IE3F30 | • IE3F43 |
| • IE3F13 | • IE3F23 | • IE3F31 | • IE3F44 |
| • IE3F14 | • IE3F24 | • IE3F32 | • IE3F45 |
| • IE3F15 | • IE3F25 | • IE3F33 | • IE3F50 |
| • IE3F16 | • IE3F26 | • IE3F34 | • IE3F51 |

3.1.2 IE3Axx

Action Attributes	Values
Name	<i>IE3Axx, where 'xx' stands for the ID of the filing type which is comprised in between 10 and 51.</i>
Description	<p>Realised BPMs: <i>L4-ICS2-07 Amend ENS filing.</i></p> <p>Triggered Task/Event: <i>E-07-01 – Amendment of ENS filing received event.</i></p> <p><i>High level description of the tasks triggered by the action after the reception of an ENS Amendment message:</i></p> <ol style="list-style-type: none"> 1. <i>Semantic and syntactic validation is performed on the received message;</i> 2. <i>(NOT IN BPM) The IE4Axx message is built based on the received message (IE3Axx message);</i> 3. <i>The ENS amendment message (IEA4xx message) is submitted to the Common Repository.</i>
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<p><i>This action receives the message IE3Axx as payload.</i></p> <p><i>Details on the message are available in the Technical Service Contract Document [R02].</i></p>
Post-conditions	<p><i>The possible post-conditions are the following:</i></p> <ol style="list-style-type: none"> 1. <i>An error has been identified during the validation and an error notification is submitted to the EO system (T-07-04 – Notify error in amendment of ENS filing task). The Amendment of the ENS filing is rejected (E-07-05 – Amendment of ENS filing rejected event);</i> 2. <i>The validation succeeded and the amendment of the ENS filing is submitted to the ICS2 Common Repository Application (T-07-02- Submit amendment of ENS filing to CR task and E-07-02 - Amendment of ENS filing submitted event).</i>

Table 7: Specification of IE3F43

The available amendment actions are:

- | | | | |
|----------|----------|----------|----------|
| • IE3A10 | • IE3A20 | • IE3A29 | • IE3A42 |
| • IE3A11 | • IE3A21 | • IE3A30 | • IE3A43 |
| • IE3A12 | • IE3A22 | • IE3A31 | • IE3A44 |
| • IE3A13 | • IE3A23 | • IE3A32 | • IE3A45 |
| • IE3A14 | • IE3A24 | • IE3A33 | • IE4A50 |
| • IE3A15 | • IE3A26 | • IE3A34 | • IE3A51 |
| • IE3A16 | • IE3A27 | • IE3A40 | |
| • IE3A17 | • IE3A28 | • IE3A41 | |

3.1.3 IE3Q04

Action Attributes	Values
Name	<i>IE3Q04</i>
Description	<p>Realised BPM: <i>L4-ICS2-08 Invalidate filing.</i></p> <p>Triggered Task/Event: <i>E-08-01 - ENS filing Invalidation Request Received event.</i></p> <p><i>High level description of the tasks triggered by the Action after the reception of an ENS Invalidation Request message:</i></p> <ol style="list-style-type: none"> <i>Semantic and syntactic validation is performed on the received message;</i> <i>(NOT IN BPM) The IE4Q06 message is built based on the received message (IE3Q04 message);</i> <i>The ENS Invalidation message (IE4Q06 message) is submitted to the Common Repository.</i>
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<p><i>This Action receives the message IE3Q04 as payload.</i></p> <p><i>Details on the message are available in the Technical Service Contract Document [R02].</i></p>
Post-conditions	<p><i>The possible post-conditions are the following:</i></p> <ol style="list-style-type: none"> <i>An error has been identified during the validation and an error notification is submitted to the EO system (T-08-02 Notify error in invalidation of ENS filing task). The ENS filing invalidation is rejected (E-08-07 ENS filing invalidation request rejected event);</i> <i>The validation succeeded and the invalidation of the ENS filing is submitted to the ICS2 Common Repository Application (T-08-03 – Submit ENS filing invalidation request to CR task and E-08-02 - ENS filing invalidation request submitted event).</i>

Table 8: Specification of IE3Q04

3.1.4 IE3Q05

Action Attributes	Values
Name	<i>IE3Q05</i>
Description	<p>Realised BPM: <i>L4-ICS2-13 Consult ENS.</i></p> <p>Triggered Task/Event: <i>E-13-01 - ENS consultation request received event.</i></p> <p><i>High level description of the tasks triggered by the Action after the reception of an ENS consultation request:</i></p> <ol style="list-style-type: none"> <i>(NOT IN BPM) Semantic and syntactic validation is performed on the received message;</i> <i>(NOT IN BPM) The IE4Q09 message is built based on the received message (IE3Q05 message);</i>

Action Attributes	Values
	3. <i>The ENS consultation request message (IE4Q09 message) is submitted to the Common Repository.</i>
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<i>This Action receives the message IE3Q05 as payload. Details on the message are available in the Technical Service Contract Document [R02].</i>
Post-conditions	<i>The possible post-conditions are the following:</i> <ol style="list-style-type: none"> <i>The consultation of the ENS filing is submitted to the ICS2 Common Repository Application (T-13-01 – Submit ENS consultation request to CR task and E-13-04 – ENS consultation request received from HTI).</i> <i>An error has been identified during the validation and an error notification is submitted to the EO system.</i>

Table 9: Specification of IE3Q05

3.1.5 IE3N06

Action Attributes	Values
Name	<i>IE3N06</i>
Description	<i>Realised BPM: L4-ICS2-04 Process arrival of means of transport. Triggered Task/Event: E-04-01 - Arrival notification of the means of transport received event. High level description of the tasks triggered by the Action after the reception of an Arrival notifications of the means of transport message:</i> <ol style="list-style-type: none"> <i>Semantic and syntactic validation is performed on the received message;</i> <i>The Arrival notification is registered and a MRN is assigned to it;</i> <i>(NOT IN BPM) The IE4N07 message is built based on the received message (IE3N06 message);</i> <i>The Arrival notification (IE4N07 message) is submitted to the Common Repository;</i> <i>(NOT IN BPM) The IE3R04 message is built based on the received message (IE3N06 message);</i> <i>The Person Filing is notified about the successful registration and the MRN (IE3R04 message).</i>
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<i>This action receives the message IE3N06 as payload. Details on the message are available in the Technical Service Contract Document [R02].</i>
Post-conditions	<i>The possible post-conditions are the following:</i>

Action Attributes	Values
	<ol style="list-style-type: none"> 1. An error has been identified during the validation and an error notification is submitted to the EO system (T-04-02 – Notify Error task). The Arrival of means of transport notification is rejected (E-04-02 –Arrival of means transport notification rejected event); 2. The validation succeeded, the invalidation of the ENS filing is submitted to the ICS2 Common Repository Application (T-04-04 – Submit arrival notification task) and the EO system is notified about the successful validation (T-04-05 – Notify successful registration and MRN to Person filing task, Notify Party EO systems are conditionally notified about the succesful registration (T-04-26) and E-04-03 Arrival notification submitted event).

Table 10: Specification of IE3N06

3.1.6 IE3R02

Action Attributes	Values
Name	IE3R02
Description	<p>Realised BPM: L4-ICS2-03-01 Send referral.</p> <p>Triggered Task/Event: E-03-01-02 Additional information response from Person filing received event.</p> <p>High level description of the tasks triggered by the action after the reception of an Additional Information response message:</p> <ol style="list-style-type: none"> 1. (NOT IN BPM) Semantic and syntactic validation is performed on the received message; 2. (NOT IN BPM) The IE4R02 message is built based on the received message (IE3R02 message); 3. The Additional Information Response message (IE4R02 message) is submitted to the Common Repository.
Pre-conditions	The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.
Payloads	<p>This action receives the message IE3R02 as payload (mind that this payload may contain binary files).</p> <p>Details on the message are available in the Technical Service Contract Document [R02].</p>
Post-conditions	The additional information response from Person filing is submitted to the ICS2 Common Repository application (T-03-01-03 – Submit additional information response from Person filing task and E-03-01-03 Additional information response provided event).

Table 11: Specification of IE3R02

3.1.7 IE3R03

Action Attributes	Values
Name	<i>IE3R03</i>
Description	<p><i>Realised BPM: L4-ICS2-03-01 Send referral.</i></p> <p><i>Triggered Task/Event: E-03-01-05 - HRCM screening outcome received from Person filing event.</i></p> <p><i>High level description of the tasks triggered by the action after the reception of an HRCM screening outcome message:</i></p> <ol style="list-style-type: none"> <i>1. (NOT IN BPM) Semantic and syntactic validation is performed on the received message;</i> <i>2. (NOT IN BPM) The IE4R03 message is built based on the received message (IE3R03 message);</i> <i>3. The HRCM Screening outcome (IE4R03 message) is submitted to the Common Repository.</i>
Pre-conditions	<i>The sender of the ENS Filing Message has been authorised by Customs by registering its certificate via the UUM&DS system.</i>
Payloads	<p><i>This action receives the message IE3R03 as payload.</i></p> <p><i>Details on the message are available in the Technical Service Contract Document [R02].</i></p>
Post-conditions	<i>The HRCM screening outcome is submitted to the ICS2 Common Repository application (T-03-01-06 Submit HRCM screening outcome task and E-03-01-06 HRCM screening outcome provided event).</i>

Table 12: Specification of IE3R03

3.2 ERROR HANDLING

3.2.1 Synchronous Error Handling

In case an error occurs within processing of the message by the receiving AS4 Access Point (technical error) an error signal message will be synchronously sent to the sending AS4 Access Point.

Please refer to the section 4.3 of the ICS2 Interface Control Document [R03] for more details on signal message and error signal message in particular.

3.2.2 Asynchronous Error Handling

In case of semantic errors during the processing of the message by the internal process handlers triggered by the service, a generic error message (IE3N99) will be sent to eu_ics2_c2t service with action IE3N99 exposed on the AS4 access point of the sender.

Please refer to the section 3.1.9 of the ICS2 Interface Control Document [R03] for more details on asynchronous error handling.

3.3 SERVICE USAGE TERMS

3.3.1 Service Policies

3.3.1.1 Service Security and Data Protection

- Service Confidentiality Classification:

The ICS2 STI system Confidentiality classification is “LIMITED HIGH”: it is an information system reserved for a limited number of persons on a need-to-know basis and whose disclosure to unauthorised persons would be prejudicial to the trader/his representative, Commission, other Institutions, Member States or other parties.

Additionally, the ICS2 STI system processes personal data. Thus, it must be compliant with Regulation (EC) No 45/2001³ on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. As far as the architecture overview is concerned, the systems will conform to the "Security of processing" requirement for personal data.

Finally, the ICS2 STI system receives sensitive information from traders. A reliable messaging will be ensured by eDelivery which provides a secure and reliable messaging channel using the eDelivery AS4 profile business-to-business protocol for all message exchanges between the trader system and the ICS2 STI system in both directions (including non-repudiation requirements).

Confidentiality	Integrity	Availability	Personal Data
LIMITED HIGH	CRITICAL	STRATEGIC	YES

Table 13: Service Confidentiality Classification

- Security Mechanisms:

Category	Value
End to End Security	Transport and Message Level
Authentication	Yes
Authorisation	Yes
Integrity	Yes
Encryption	Yes
Reliable Messaging	Yes

Table 14: Security Mechanisms

3.3.1.2 Other Service Usage Policies

N/A

³ Personal Data Protection Regulation (EC) 45/2001 and the Confidentiality, Integrity, Availability and Security Requirements of Information Systems defined in the Commission Decision C(2006) 3602 of 16.08.2006, Annex I.

3.3.2 Default Quality of Service (QoS)

3.3.2.1 Service Reliability

Category	Description	Indicator	Value	Penalty
Availability	<i>The availability requirements for the ICS2 STI system are expressed in availability during 24 hours per day, 365 days per year with a maintenance window of 1 hour per week (during Mondays between 2:30 AM and 3:30 AM).</i>	<i>Downtime in years</i>	<i>99.45%⁴ (source: Architecture Overview document [R05])</i>	<i>N/A</i>

Table 15: Service Reliability

3.3.2.2 Service Performance

Category	Description	Indicator	Value	Penalty
Latency	<i>Refers to the maximum amount of time between the arrival of a request and the completion of that request.</i>	<i>Duration (in milliseconds)</i>	<i>100ms</i>	<i>N/A</i>
Capacity	<i>Refers to the number of concurrent requests that can be handled by the service in a given time period. It is possible to specify the maximum number of concurrent requests that can be handled by a service in a set block of time.</i>	<i>Filings received per second 5</i>	Release 1: <i>Normal Traffic: 43.2</i> <i>Peak Traffic: 172.7</i>	<i>N/A</i>
			Release 2: <i>Normal Traffic: 62.7</i> <i>Peak Traffic: 250.9</i>	
			Release 3: <i>Normal Traffic: 73.7</i> <i>Peak Traffic: 294.8</i>	

Table 16: Service Performance

⁴ This is only valid for ICS2 R2 until Q3/2022. As of Q4/2022, GOLD SLA will become into effect and the required availability will be 99.8%.

⁵ Figures are calculates based on the current volumetric estimates. The provided figures are global figures of outgoing traffic from STI. Hence, only a specific portion of this traffic will be targeting a specific instance of the service implemented by a given system.

4 SERVICE ORCHESTRATION LOGIC

4.1 ORCHESTRATION LOGIC

Details on the business orchestration logic executed asynchronously between the TI and EO applications are described in the Interface Control Document [**R03**].

5 ANNEX: SUPPORTED ACTIONS PER STI RELEASE

The following tables group the actions that are supported per each ICS2 STI release.

Action	R1	R2	R3
IE3A32	X	X	X
IE3A43	X	X	X
IE3A44	X	X	X
IE3F32	X	X	X
IE3F43	X	X	X
IE3F44	X	X	X
IE3Q04	X	X	X
IE3R02	X	X	X
IE3R03	X	X	X
IE3A20		X	X
IE3A21		X	X
IE3A22		X	X
IE3A23		X	X
IE3A24		X	X
IE3A26		X	X
IE3A27		X	X
IE3A28		X	X
IE3A29		X	X
IE3A30		X	X
IE3A31		X	X
IE3A33		X	X
IE3A42		X	X
IE3F20		X	X
IE3F21		X	X
IE3F22		X	X
IE3F23		X	X
IE3F24		X	X
IE3F25		X	X
IE3F26		X	X
IE3F27		X	X
IE3F28		X	X
IE3F29		X	X
IE3F30		X	X
IE3F31		X	X
IE3F33		X	X
IE3F42		X	X
IE3N06		X	X
IE3Q05		X	X
IE3A10			X
IE3A11			X
IE3A12			X
IE4A13			X
IE3A14			X

Action	R1	R2	R3
IE3A15			X
IE3A16			X
IE3A17			X
IE3A34			X
IE3A40			X
IE3A41			X
IE3A45			X
IE3A50			X
IE3A51			X
IE3F10			X
IE3F11			X
IE3F12			X
IE3F13			X
IE3F14			X
IE3F15			X
IE3F16			X
IE3F17			X
IE3F34			X
IE3F40			X
IE3F41			X
IE3F45			X
IE3F50			X
IE3F51			X