



**MEF**

**J-SPEC-001 / MEF 57**

**Ethernet Ordering Technical Specification  
Business Requirements and Use Cases**

**Joint Standard**

**July 2017**



As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global ICT companies to advance the industry's most pressing business priorities. ATIS' nearly 200 member companies are currently working to address the All-IP transition, 5G, network functions virtualization, big data analytics, cloud services, device solutions, emergency services, M2M, cyber security, network evolution, quality of service, billing support, operations, and much more. These priorities follow a fast-track development lifecycle — from design and innovation through standards, specifications, requirements, business use cases, software toolkits, open source solutions, and interoperability testing.

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MEF has established a technical and implementation framework that includes architecture, information models, service definitions, operational processes, open source community, and certification programs. MEF work is conducted internally and -- under the guidance of the MEF UNITE program -- in collaboration with global standards organizations and open source projects. See [www.mef.net](http://www.mef.net) for more information.

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# 1. List of Contributing Member Companies

The following Member companies of the MEF Forum and Alliance for Telecommunication Industry Solutions (ATIS) participated in the development of this document.

Member Companies	
AT&T	Innovative Systems
Amdocs	Level3
Bell Canada	National Exchange Carrier Association (NECA)
CableLabs	National Information Solution Coop (NISC)
CenturyLink	Neustar, Inc.
Charter Communications	Oracle Communications
Comcast	PCCW Global
CommSoft	PLDT Corp. Business Solutions
Communications Data Group	Sigma Systems Canada
Cox Communications	Sprint
Creative Support Solutions	Strategic Options Business Consulting
CSG International	Synchronoss Technologies
Ericsson	TDS
FairPoint Communications, Inc.	TEOCO Corp
Hawaiian Telcom	T-Mobile
Horry Telephone Cooperative (HTC)	Verizon
Huawei	West Corporation
iconectiv	

Table 1 - Contributing Member Companies

## 2. Abstract

This document represents the cumulative work between MEF and ATIS Ordering and Billing Forum (OBF) to identify the common ordering attributes and processes needed to support inter-carrier Product Ordering of Ethernet Services worldwide. This document supports the requirements defined in the MEF Lifecycle Service Orchestration (LSO) Reference Architecture and Framework (MEF 55, "LSO RA") requirements for Ordering over the Sonata interface (Service Provider <-> Partner interactions). Information contained within this document will be utilized by both Buyer and Seller ordering systems for the development of automated API systems.

## 3. Terminology and Acronyms

This section defines the terms used in this document. In many cases, the normative definitions to terms are found in other documents. In these cases, the third column is used to provide the reference that is controlling, in other MEF or external documents.

The following standards and specifications contain provisions that, through reference in this text, constitute provisions of this Specification. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this Specification are encouraged to investigate the possibility of applying the most recent editions of the standards and specifications indicated below.

<b>Term</b>	<b>Definition</b>	<b>Reference</b>
Access E-Line	An E-Access Service, based on the O-Line Service definition.	MEF 51
Application Program Interface (API)	In the context of Lifecycle Service Orchestration (LSO), API describes one of the Management Interface Reference Points based on the requirements specified in an Interface Profile, along with a data model, the protocol that defines operations on the data and the encoding format used to encode data according to the data model.	MEF 55
Buyer	Using MEF 55 terminology, a Buyer may be a Customer or a Service Provider who is buying from a Partner. For the purposes of this document, a Buyer is the Service Provider who is ordering from a Partner (aka, Seller).	This document
Buyer Order	A commercial document which may be electronically transmitted, and first official offer issued by a Buyer to a Seller, indicating types, quantities, and agreed prices for products or services.	This document
Business Rule	A Seller defined constraint or validation that is implemented as part of the Order acceptance and handling process. Business rules are used to ensure accuracy of Order data and enforce MEF-defined rules in a way that aligns with the product offering specifications.	This document
Carrier Ethernet Network (CEN)	A network from a Service Provider or network operator supporting the MEF service and architecture models.	MEF 12.1
Class of Service (COS)	A designation given to one or more sets of performance objectives and associated parameters by the Service Provider.	MEF 10.3
CLLI™ Code	A CLLI™ Code is an eleven character, standardized, geographic identifier which uniquely identifies the geographic location and certain functional categories of equipment.	ATIS-0300253
Customer	A Customer is the organization purchasing, managing, and/or using Connectivity Services from a Service Provider. This may be an end-user business organization, mobile operator, or a partner network operator.	MEF 55
Data Model	A mapping of the contents of an information model into a form that is specific to a particular type of data store or repository. A "data model" is basically the rendering of an information model according to a specific set of mechanisms for representing, organizing, storing and handling data.	IETF RFC 3198
End Customer	The name of the end (retail) customer for the UNI.	This document
Ethernet Virtual Connection (EVC)	An association of two or more Ethernet UNIs.	MEF 4
External Network-to-Network Interface (ENNI)	A reference point representing the boundary between two Operator networks that are operated as separate administrative domains.	MEF 26.2

Term	Definition	Reference
Geographic Point	A geometric point on Earth, which can include a latitude, longitude, and elevation, corresponding to the location of service, such as a Site Address, a Site CLLI Code or a Site Geographic Point.	This document
Information Model	An abstraction and representation of the entities in a managed environment, their properties, attributes and operations, and the way that they relate to each other. It is independent of any specific repository, software usage, protocol, or platform.	IETF RFC 3198
Interface Profile	Defines the structure, behavior, and semantics supporting a specific Management Interface Reference Point as identified in the LSO Reference Architecture (MEF 55). The Interface Profile specification contains all the necessary information to implement the related API, including objects, attributes, operations, notifications, and parameters.	MEF 55
O-Line Service	A General OVC Service that uses a Point-to-Point OVC.	MEF 51
Operator Virtual Connection (OVC)	An association of OVC End Points	MEF 26.2
OVC End Points	A logical entity at a given External Interface that is associated with a distinct set of frames passing over that External Interface i.e., UNI, ENNI.	MEF 26.2
Partner	An organization providing Products and Services to the Service Provider (Buyer) in order to allow the Service Provider to instantiate and manage Service Components external to the Service Provider domain.	MEF 55
Scenario	A narrative of foreseeable interactions of actors and the system under design. A Scenario describes one way that a system is or is envisaged to be used in the context of activity in a defined time-frame.	Wikipedia
Seller	Using MEF 55 terminology, a Seller may be a Service Provider or a Partner who is providing service to a Buyer. For the purposes of this document, a Seller is the Partner who is providing the product to the Buyer.	This document
Service Component	A segment or element of a Service that is managed independently by the Service Provider.  In the context of Ethernet Ordering, when a Buyer wishes to order only a portion of an Ethernet Service, the portion being ordered is called a "component" or "service component". For example, a Buyer may wish to order just a UNI without an association to an EVC or OVC.	MEF 55
Service Level Agreement (SLA)	The contract between the Customer and Service Provider or Operator specifying the agreed to service level commitments and related business agreements.	MEF 10.3
Service Provider	The organization providing Ethernet Service(s).	MEF 10.3
Service Provider Buyer Identifier	The ID of the Service Provider (Buyer) organization placing the order.	This document
Standalone UNI	In the context of Ethernet Ordering, a Standalone UNI is a request by the Buyer to the Seller for a User Network Interface (UNI) that has no association to an EVC or OVC. These types of orders are typically done to build out locations in advance of service delivery requirements or to groom network capacity.	This document
User Network Interface (UNI)	The physical demarcation point between the responsibility of the Service Provider and the responsibility of the Subscriber.	MEF 10.3

Term	Definition	Reference
Unified Modeling Language (UML)	Unified Modeling Language (UML) is a graphical language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system. The UML offers a standard way to write a system's blueprints, including conceptual things such as business processes and system functions as well as concrete things such as programming language statements, database schemas, and reusable software components."	Object Management Group (OMG) UML
Unified Ordering Model (UOM)	UOM describes a complete set of system documentation using an end-to-end structured methodology. The scope of UOM encompasses business requirements, analysis, design, and implementation.	ATIS Terminology
Use Case	In UML, Use Cases are a means to capture the requirements of systems, i.e., what systems are supposed to do. Each Use Case's subject represents a system under consideration to which the Use Case applies. A Use Case is a specification of behavior.	OMG UML 2.5

Table 2 - Terminology and Acronyms

## 4. Scope

This specification defines the process for MEF Carrier Ethernet order negotiation/management between a Partner/Access Provider (Seller) and Service Provider (Buyer). The Ethernet Ordering specification will be based on MEF defined services and is intended to be used internationally. The requirements for Ethernet Ordering will be developed following a UML process approach which includes, but is not limited to, Business Process Flows, Use Cases, Scenarios, Information Models, and State Machine Diagrams. This specification is limited to the business process requirements depicted as Use Cases and attribute definitions needed for Ethernet Ordering. It will be the basis of requirements for a Product Order Data Model and API.

## 5. Compliance Levels

The requirements that apply to the functionality of this document are specified in the following sections. Items that are REQUIRED (contain the words MUST or MUST NOT) will be labeled as [Rx]. Items that are RECOMMENDED (contain the words SHOULD or SHOULD NOT) will be labeled as [Dx]. Items that are OPTIONAL (contain the words MAY or OPTIONAL) will be labeled as [Ox].

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119. All key words use upper case, bold text to distinguish them from other uses of the words. Any use of these key words (e.g., may and optional) without [Rx], [Dx] or [Ox] is not normative.

## 6. Introduction

This specification defines the business requirements and process-related guidelines for the Ordering process over the Sonata interface. The Sonata interface is defined in MEF 55 as the Management Interface Reference Point supporting the management and operations interactions (e.g., ordering, billing, trouble management, etc.) between two network providers (e.g., Service Provider Domain and Partner Domain). The scope of this document is limited to interactions between these parties; within this document, they are referred to as the "Buyer" and the "Seller".

To fully define the business interactions associated with inter-carrier ordering, this document is focused on the following key areas: Section 7 defines the Use Cases and Order Management Scenarios, Section 8 defines the specific ordering

attributes associated with the product orders supported in this document and Section 9 provides the State Diagram for Product Ordering. Implementation details will be separately published in an Interface Profile Specification.

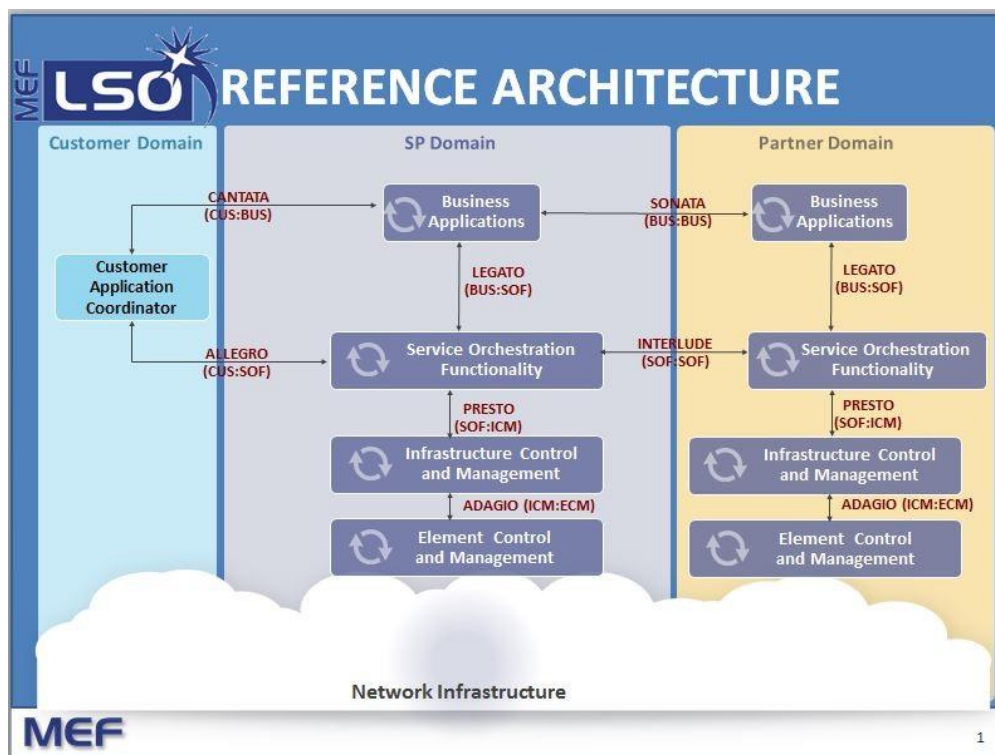


Figure 1 - Lifecycle Service Orchestration Reference Architecture (LSO RA) diagram

Figure 1 depicts the Ethernet Ordering process alignment with the LSO RA, per MEF 55. This document addresses the interactions between the business applications of the Service Provider (“Buyer”) and Partner domains (“Seller”) required to support the buying and selling of Ethernet Services. Various supporting business functions may be utilized prior to initiation of the ordering process. Those functions are outside the scope of this document.

It is important to note that specifications related to Service Provider-Partner interactions without the submission of a Product Order are also outside the scope of this document. Therefore, if non-Order impacting changes to an Ethernet Service are permitted, those changes could be exchanged over the Interlude interface and would not follow the requirements specified in this document.

## 6.1 Product Order Scenarios

Product Ordering requirements for the following MEF Ethernet Services and/or service components are supported in this version of the document:

- Access E-Line
- Standalone UNI

In addition, some Use Cases and associated requirements are generic in nature and have been defined in a manner that supports all MEF Ethernet Services. Those requirements which support more than Access E-Line have been noted in the Use Case description.

Future versions of this document will expand the requirements to fully define all MEF Ethernet Services that are ordered via the Sonata interface.



## 7. Ordering Use Cases and Business Process Definitions

### 7.1 High Level Use Cases

This section provides the complete set of Use Cases needed to support the ordering of Ethernet Services and expands on the ordering process defined in MEF 50 (Carrier Ethernet Service Lifecycle Process Model). These Use Cases are based on business process standards of interactivity between ordering entities and providers. Each use case drives the need for specific ordering information blocks, and administrative process tracking objects. The specific attributes associated with each Use Case are defined in Section 8. Prior arrangements for Buyer authentication, security verification and system interface requirements are not addressed within these use cases. All onboarding requirements must be defined and negotiated between the Buyer and Seller prior to the submission of any Ethernet orders.

It is expected that a catalog will be utilized to identify all products and services available for each Buyer. The catalog may provide the ability for a Buyer to purchase an entire product with all associated components as well as the procurement of various elements that comprise that specific service such as the business process of ordering a physical UNI for future use, but not ordering an EVC or OVC to that UNI in the order itself. The requirements for how a catalog is used within the ordering process are outside the scope of this document.

#### 7.1.1 Product Order Management Use Cases

This section defines the use cases that support the end-to-end lifecycle of Product Ordering of Ethernet Services. The term “service” within this document pertains to the deployed Carrier Ethernet Service realized as a result of a Product Order.

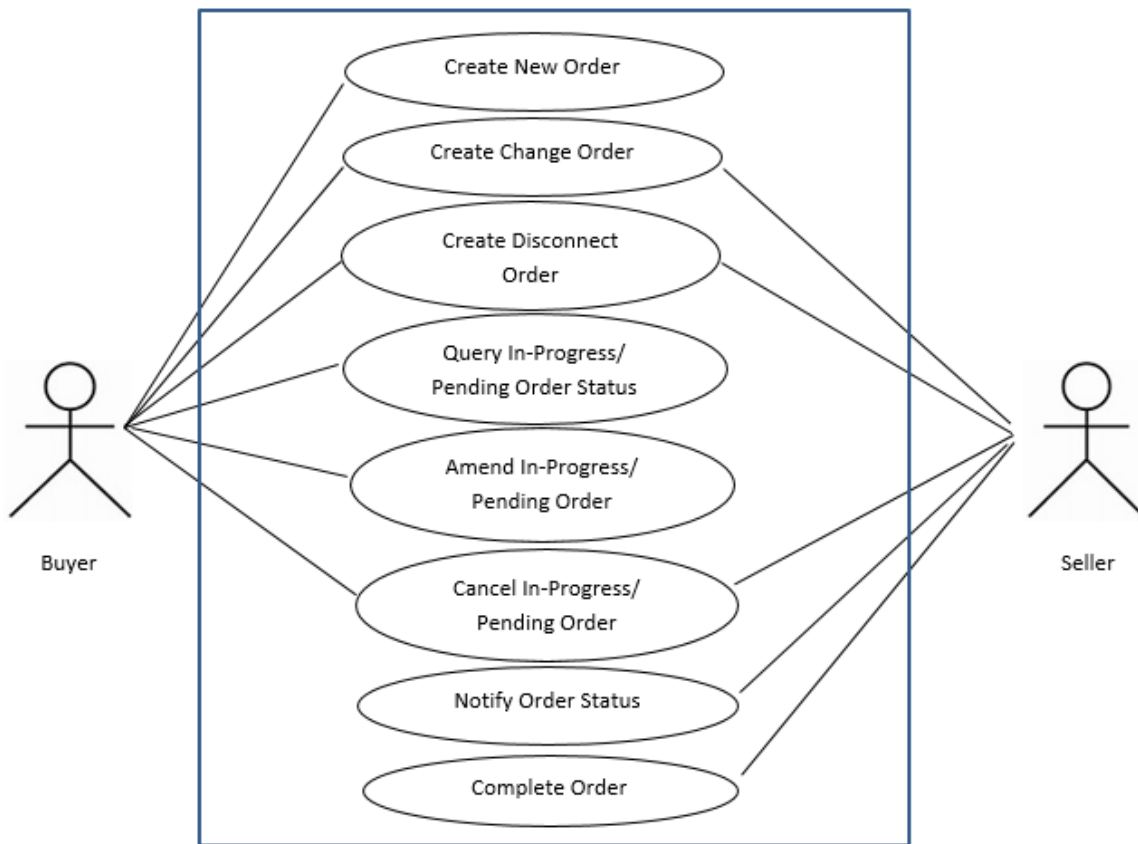


Figure 2 - MEF Product Order Management Use Cases

Figure 2 indicates which party may initiate the process defined in the Use Case.

Use Case #	Use Case Name	Use Case Description
1	Create New Order	A request initiated by the Buyer to order a new product or service component(s).
2	Create Change Order	A request initiated by the Buyer or Seller to order a modification/change to an existing active service or service component(s).
3	Create Disconnect Order	A request initiated by the Buyer or Seller to terminate (e.g., disconnect) existing active service(s) or service component(s).
4	Query In-Progress/Pending Order Status	A request initiated by the Buyer to request the status of an open/pending order. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.
5	Amend In-Progress/Pending Order	A request initiated by the Buyer to modify/amend an in-progress/pending order. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.
6	Cancel In-Progress/Pending Order	A request initiated by the Buyer or Seller to cancel an in-progress/pending order. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.
7	Notify Order Status	A notification initiated by the Seller to the Buyer providing subsequent status information on "Acknowledged" orders such as service delivery confirmation, error, and/or jeopardy messages. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.
8	Complete Order	A notification initiated by the Seller to the Buyer to close an in-progress/pending order. This use case notifies the Buyer the service is now activated and no further actions are required. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.

Table 3 - MEF Product Order Management Use Case Summary

### 7.1.1.1 Order Management Use Case Descriptions

This section defines the details for each of the order management Use Cases.

Field	Description
Use Case #	1
Use Case Name	Create New Order
Description	A request initiated by the Buyer to order a new product or service component(s).
Actors	Buyer, Seller

Pre-Conditions	<ol style="list-style-type: none"> <li>1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded)</li> <li>2. Buyer may have completed pre-order inquiries/serviceability request.</li> <li>3. Buyer may have completed a quoting process to obtain pricing information.</li> </ol>
Process Steps	<ol style="list-style-type: none"> <li>1. The Buyer initiates and submits a new order.</li> <li>2. The Seller's gateway receives a new order.</li> <li>3. The Seller validates the new order.</li> <li>4. The Seller accepts the new order and provides a response with an assigned Seller Order ID. The status of the Order is set to "Acknowledged" by the Seller.</li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. The "Acknowledged" order is ready for processing including additional business rule validation.</li> <li>2. Seller initiates order processing and notifies the Buyer of commitment to provide the requested product by a specific date.</li> </ol>
Alternative Paths	<ol style="list-style-type: none"> <li>1. If fatal errors are encountered in the validation step, the Seller returns all identified errors in a reject response and the Buyer may submit a new order. Fatal errors may include validations such as malformed request (invalid payload), software application is not available and/or security/authentication violation failures. The status of the Order is set to "Rejected" by the Seller.</li> </ol>
Assumptions	<ol style="list-style-type: none"> <li>1. The electronic method for sending the order will be the same as the electronic method for sending the responses.</li> <li>2. The Buyer has determined target Seller (Partner/Access Provider). Partner selection is out-of-scope.</li> <li>3. The Buyer and the Seller have established a partnership agreement (which might include ENNI inventory).</li> </ol>
References	ATIS/OBF Use Case Mapping: Service Request Placement/Pre-Validation (UOM-ASR Volume I)

Field	Description
Use Case #	2
Use Case Name	Create Change Order
Description	<p>A request initiated by the Buyer or Seller to order a modification/change to an existing active product or service component(s), such as:</p> <ul style="list-style-type: none"> <li>• Adding or removing components to or from an existing service (e.g. adding/removing a leg to an existing EPL)</li> <li>• Modifying attributes of an existing service or service components (e.g. EVC bandwidth change, Telecommunication Service Priority (TSP)/restoration priority identifier).</li> <li>• Modifying service demarcation point of an existing service (e.g. rehome EVC's from one UNI to another UNI, change physical port)</li> <li>• Administrative changes to an existing service (e.g. changing billing address of service).</li> </ul> <p>Note: this is a list of possible scenarios; other scenarios may exist.</p> <p>This use case supports all MEF Services, not just Access E-Line.</p>

Actors	Buyer, Seller
Pre-Conditions	<ol style="list-style-type: none"> <li>1. The product being modified is already allocated or activated and in-service.</li> <li>2. An authorized Buyer/Seller must initiate the change of an in-service product.</li> <li>3. Buyer may have completed pre-order inquiries/serviceability request.</li> <li>4. Buyer may have completed a quoting process to obtain pricing information.</li> </ol>
Process Steps	<ol style="list-style-type: none"> <li>1. The Buyer/Seller initiates a change order.</li> <li>2. The Seller's gateway receives a change order.</li> <li>3. The Seller validates the change order.</li> <li>4. The Seller accepts the change order and provides a response with an assigned Seller ID. The status of the Order is set to "Acknowledged" by the Seller.</li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. The "Acknowledged" order is ready for processing including additional business rule validation.</li> <li>2. Seller initiates order processing and notifies the Buyer of commitment to provide the requested product by a specific date.</li> </ol>
Alternative Paths	<ol style="list-style-type: none"> <li>1. If fatal errors are encountered in the validation step, the Seller returns all identified errors in a reject response and the Buyer may submit a new change order. Fatal errors may include validations such as malformed request (invalid payload), software application is not available and/or security/authentication violation failures. The status of the Order is set to "Rejected" by the Seller.</li> </ol>
Assumptions	<ol style="list-style-type: none"> <li>1. The electronic method for sending the order will be the same as the electronic method for sending the responses.</li> <li>2. The Seller may provide business requirements to the Buyer stipulating rules for the submission of a Change Order and submission of multiple Change Orders.</li> </ol>
References	ATIS/OBF Use Case Mapping: Service Request Placement/Pre-Validation (UOM-ASR Volume I)

Field	Description
Use Case #	3
Use Case Name	Create Disconnect Order
Description	<p>A request initiated by the Buyer or Seller to terminate (e.g., disconnect) an existing active service(s) or service component(s).</p> <p>This use case supports all MEF Services, not just Access E-Line.</p>
Actors	Buyer, Seller
Pre-Conditions	<ol style="list-style-type: none"> <li>1. The service(s) being disconnected is/are already activated and in-service.</li> <li>2. An authorized Buyer/Seller must initiate the disconnect of an in-service product.</li> </ol>
Process Steps	<ol style="list-style-type: none"> <li>1. The Buyer/Seller initiates a disconnect order with order items of the same or different MEF Services. It is recommended that no more than 20 order items be submitted on a single disconnect order.</li> <li>2. The Seller's gateway receives a disconnect order.</li> <li>3. The Seller validates the disconnect order and associated order items.</li> </ol>

	4. The Seller accepts the disconnect order and provides a response with an assigned Seller Order ID. The status of the Order is set to “Acknowledged” by the Seller.
Post-Conditions	<ol style="list-style-type: none"> <li>1. The “Acknowledged” order is ready for processing including additional business rule validation.</li> <li>2. Seller initiates order process and notifies Buyer of commitment to provide the requested product by a specific date.</li> </ol>
Alternative Paths	1. If fatal errors are encountered in the validation step, the Seller returns all identified errors in a reject response and the Buyer may submit a new disconnect order. Fatal errors may include validations such as malformed request (invalid payload), determination of non-eligible order items, software application is not available and/or security/authentication violation failures. The status of the Order is set to "Rejected" by the Seller.
Assumptions	<ol style="list-style-type: none"> <li>1. The electronic method for sending the order will be the same as the electronic method for sending the responses.</li> <li>2. Any order item on the disconnect order will not have another service associated to it.</li> <li>3. Individual Seller business rules will enforce any limit on the amount of order items that can be requested for disconnect on a single order.</li> </ol>
References	ATIS/OBF Use Case Mapping: Service Request Placement/Pre-Validation (UOM-ASR Volume I)

Field	Description
Use Case #	4
Use Case Name	Query In-Progress/Pending Order Status
Description	<p>A request initiated by the Buyer to request the status of an open/pending order. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.</p> <p><u>This use case supports all MEF Services, not just Access E-Line.</u></p>
Actors	Buyer, Seller
Pre-Conditions	<ol style="list-style-type: none"> <li>1. The Buyer must be authorized to perform the inquiry.</li> <li>2. An in-progress/pending order exists in the Seller's system, and the Seller has initiated the validation process. (The order is not yet complete.)</li> </ol>
Process Steps	<ol style="list-style-type: none"> <li>1. Buyer initiates a query request to the Seller using the Seller Order ID.</li> <li>2. The Seller responds to the query request with the status of the order and the associated order items.</li> </ol>
Post-Conditions	1. The Buyer receives the appropriate response.
Alternative Paths	<ol style="list-style-type: none"> <li>1. If errors are encountered, the Seller returns all identified errors in a reject response and the Buyer may submit a new query.</li> <li>2. If the query is received after the order has been completed, the Buyer may receive a reject response.</li> <li>3. If the Seller order “ID” is not found, the Buyer may receive a reject response.</li> </ol>

Assumptions	1. The electronic method for sending the order will be the same as the electronic method for sending the responses.
References	ATIS/OBF Use Case Mapping: Retrieve Service Request Information (UOM-ASR Volume I)

Field	Description
Use Case #	5
Use Case Name	Amend In-Progress/Pending Order
Description	A request initiated by the Buyer to modify/amend an in-progress/pending order. This Use Case is only applicable after initiation of Use Case # 1, 2, or 3.
Actors	Buyer, Seller
Pre-Conditions	1. An in-progress/pending order exists in the Seller's system.
Process Steps	<ol style="list-style-type: none"> <li>1. The Buyer initiates a request to amend an existing active order. <ol style="list-style-type: none"> <li>a. The Buyer initiates a request to amend an In-Progress/Pending Order.</li> <li>b. The Seller's gateway receives the request.</li> <li>c. The Seller validates the request.</li> <li>d. The Seller accepts the amended order and provides a response with the previously assigned Seller Order ID. The status of the Order is set to "Acknowledged" by the Seller.</li> </ol> </li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. The "Acknowledged" amended order is ready for processing including additional business rule validation.</li> <li>2. Seller initiates the order process and notifies the Buyer of commitment to provide the requested product by a specific date.</li> </ol>
Alternative Paths	<ol style="list-style-type: none"> <li>1. If fatal errors are encountered in the validation step, the Seller returns all identified errors in a reject response. Fatal errors may include validations such as malformed request (invalid payload), software application is not available and/or security/authentication violation failures. The status of the Order is set to "Rejected" by the Seller.</li> <li>2. The Buyer either corrects the errors and re-sends an Amend In-Progress/Pending Order or sends a Cancel In-Progress/Pending Order to the Seller.</li> <li>3. The Seller may determine that the In-Progress/Pending Order cannot be amended and may reject the request.</li> </ol>
Assumptions	1. The electronic method for sending the order will be the same as the electronic method for sending the responses.
References	ATIS/OBF Use Case Mapping: Perform Service Request Supplement (UOM-ASR Volume I)

Field	Description
Use Case #	6

Use Case Name	Cancel In-Progress/Pending Order
Description	A request initiated by the Buyer or Seller to cancel an in-progress/pending order. This Use Case is only applicable after creation of order in Use Case # 1, 2, or 3. <u>This use case supports all MEF Services, not just Access E-Line.</u>
Actors	Buyer, Seller
Pre-Conditions	1. An in-progress/pending order exists in the Seller's system.
Process Steps	<ol style="list-style-type: none"> <li>1. The Buyer/Seller initiates a cancellation request to an in-progress/pending order.</li> <li>2. The Seller's gateway receives the cancellation request.</li> <li>3. The Seller validates the cancellation request.</li> <li>4. The Seller accepts the cancellation request and provides a response with the previously assigned Seller Order ID. The status of the Order is set to "Acknowledged" by the Seller.</li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. The "Submitted" order is ready for processing including additional business rule validation.</li> <li>2. Seller initiates the cancellation process, changes the status to "Cancelled", and notifies the Buyer of the cancellation.</li> </ol>
Alternative Paths	<ol style="list-style-type: none"> <li>1. If errors are found, the Seller returns an error response. The status of the Order is set to "Rejected" by the Seller.</li> <li>2. The Seller may determine that the In-Progress/Pending Order cannot be cancelled and may reject the request. The status of the Order is set to "Rejected" by the Seller.</li> <li>3. The Buyer either corrects the errors and re-sends a Cancel In-Progress/Pending Order or sends an Amend In-Progress/Pending Order to the Seller.</li> </ol>
Assumptions	1. The electronic method for sending the order will be the same as the electronic method for sending the responses.
References	ATIS/OBF Use Case Mapping: Service Request Placement/Pre-Validation (UOM-ASR Volume I)

Field	Description
Use Case #	7
Use Case Name	Notify Order Status
Description	<p>A notification initiated by the Seller to the Buyer providing subsequent status information on "Acknowledged" orders such as service delivery confirmation (commitment), error, and/or jeopardy messages. This Use Case is only applicable after creation of order in Use Case # 1, 2, or 3.</p> <p><u>This use case supports all MEF Services, not just Access E-Line.</u></p>
Actors	Buyer, Seller
Pre-Conditions	1. An in-progress/pending order exists in the Seller's system, and the Seller has initiated the validation process.

Process Steps	<ol style="list-style-type: none"> <li>1. The Seller initiates a notification based on any of the following events. The Buyer receives the Seller initiated notifications <ol style="list-style-type: none"> <li>a. Change in Order status</li> <li>b. Seller-specific network configuration (e.g., Design Layout Report) as well as other general information conveyed to the Buyer</li> <li>c. Order confirmation (commitment)</li> <li>d. Error condition</li> <li>e. Jeopardy condition</li> </ol> </li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. The Buyer may submit a correction or modification via the Amend In-Progress/Pending Order Use Case.</li> <li>2. The Seller may submit a cancellation via the Cancel In-Progress/Pending Order Use Case.</li> </ol>
Alternative Paths	None
Assumptions	<ol style="list-style-type: none"> <li>1. The electronic method for sending the notification will be the same as the electronic method for sending the order response.</li> </ol>
References	ATIS/OBF Use Case Mapping: Clarification/Notification Request

Field	Description
Use Case #	8
Use Case Name	Complete Order
Description	A notification initiated by the Seller to the Buyer to close an in-progress/pending order. This use case notifies the Buyer the service is now activated and no further actions are required. This Use Case is only applicable after creation of order in Use Case # 1, 2, or 3. <u>This use case supports all MEF Services, not just Access E-Line.</u>
Actors	Buyer, Seller
Pre-Conditions	<ol style="list-style-type: none"> <li>1. All components of the order are in-service.</li> </ol>
Process Steps	<ol style="list-style-type: none"> <li>1. The Seller notifies the Buyer that the order is complete. The status of the Order is set to "Completed" by the Seller.</li> <li>2. The Buyer received the completion notification.</li> </ol>
Post-Conditions	<ol style="list-style-type: none"> <li>1. No further updates are permitted on this order.</li> </ol>
Alternative Paths	None
Assumptions	<ol style="list-style-type: none"> <li>1. The electronic method for sending the notification will be the same as the electronic method for sending the order response.</li> </ol>
References	ATIS/OBF Use Case Mapping: Perform Completion (UOM-ASR Volume I)



## 7.2 Order Management Scenarios

The following Ordering scenarios are included in this version of the document.

### 7.2.1 Create New Order Scenarios

#### 7.2.1.1 Ordering a UNI from a Partner

The below figure and component circled in red illustrates the scenario where a wholesale customer (Buyer) is ordering a UNI at an End Customer location from a partner (Seller) as defined in MEF 10.3, Ethernet Service Attributes.

In this version of the document, ordering of a standalone UNI is to support an Access E-Line that has all CE-VLAN IDs mapped to the OVC endpoint at the UNI.

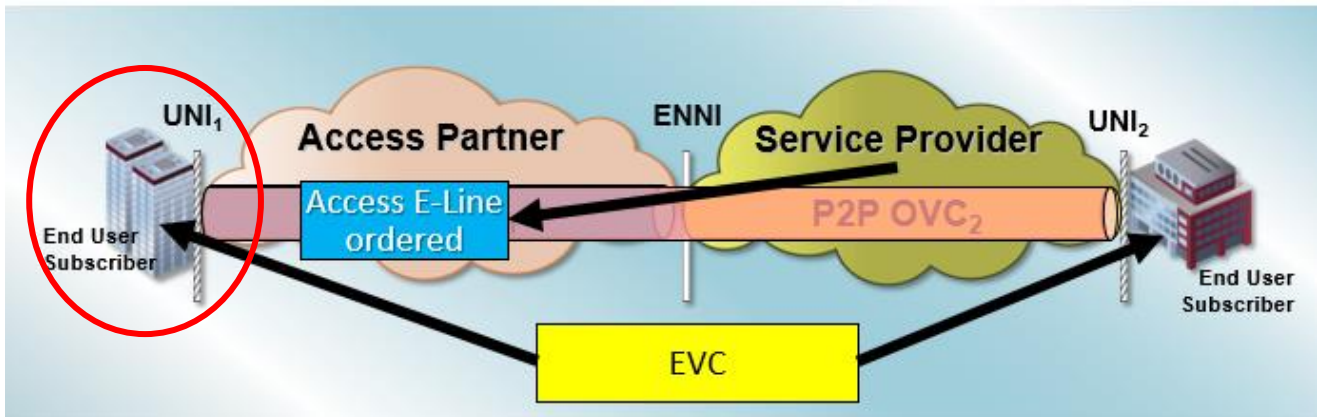


Figure 3 - Ordering a UNI Scenario

#### 7.2.1.2 Ordering an Access E-Line from a single Partner

This scenario illustrates where a Buyer orders an Access E-Line from one CEN Operator/Partner (Seller). When ordering an Access E-Line, it is possible to order both the UNI and the OVC or just order the OVC connection between an existing UNI and an existing ENNI. It is assumed that the ENNI is already existing in the network and ready to accept traffic.

In this version of the document, ordering of the Access E-Line is only supported when all CE-VLAN IDs map to the OVC endpoint at the UNI.

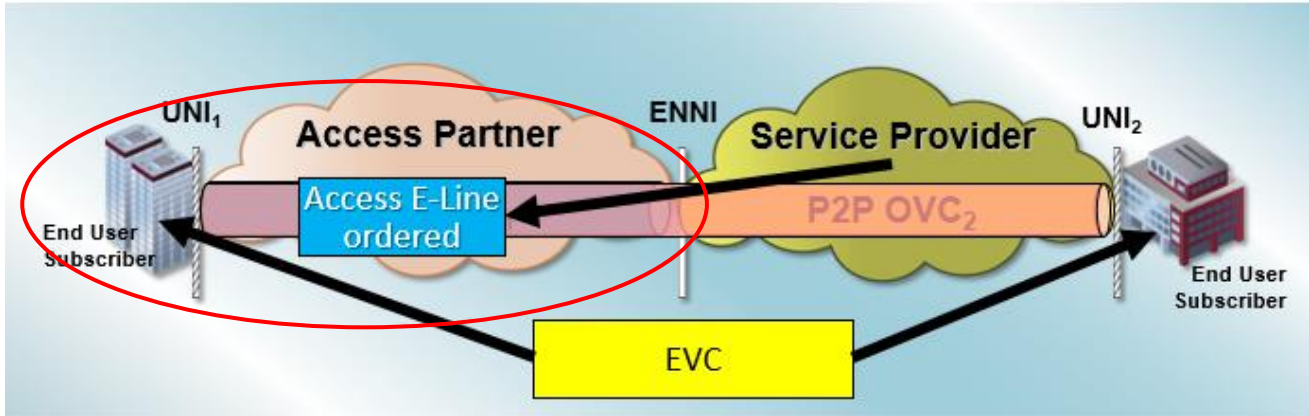


Figure 4 - Ordering an Access E-Line Scenario

## 8. Ordering Attributes

This section identifies the attributes needed for each of the ordering Use Cases defined above. Many of these attributes are new to MEF specifications as they pertain to the operations functions in a Buyer and/or Seller organization and are used to enable inter-carrier communication. The “Requirements” specified below are only defined in the context of Ordering; all characteristics of MEF-defined attributes should be referenced in the appropriate MEF Technical Specification document (MEF 26.1, MEF 26.2, MEF 10.3 and MEF 51 as examples). Where the attribute is not defined in an existing MEF specification, this document will fully define the attribute characteristics.

It is important to note that this section defines the superset of all MEF-defined attributes needed to support Product Ordering for the Use Cases defined in this document. It is possible that individual Sellers may require additional attributes for their unique product offerings and the ability to extend the technical implementation of these requirements to allow for Buyer-Seller specific attributes should be accommodated but not mandated by the implementation design.

### 8.1 Access E-Line Product Ordering Attributes

The below table defines the attributes associated with the Create New Order (Use Case 1), Create Change Order (Use Case 2) and Amend In-Progress/Pending Order (Use Case 5) for an Access E-Line Order. If the Access E-Line Order is also requesting the creation of a New UNI, the below table includes the ability to reference another Order Item that contains the UNI details. The attributes required to order a UNI are identified in Section 8.2.

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Order Header Information							
Order ID	Unique identifier for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Prohibited	Required	Prohibited	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order.

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Buyer (Service Provider) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller. Specifically, the ID of the Service Provider (Buyer) organization placing the order.	String	25	Required	Required	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.
Seller (Partner/Access Provider) ID	A Party Role played by an organization that provides products and services to a Buyer. Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	Required	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	Required	Required	The original value MUST be maintained for the life of the Order. This value may be reused after two years from the completion date of the original order.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Required	Required	Required	This value MUST be assigned by the Buyer and retained by the Seller.
Order Date	Date when the order was created	dateTime		Required	Required	Required	This value MUST be assigned by the Buyer when submitting an Order.
Order Activity	The type of order, as defined by the business (e.g., install, change, disconnect).	Enumeration		Required	Required	Required	The valid values for this field are: <ul style="list-style-type: none"> <li>• install</li> <li>• change</li> <li>• disconnect</li> </ul>
Desired Responses	The type of order responses that the buyer wishes to receive from the Seller	Enumeration		Required	Required	Required	The valid values for this field are: <ul style="list-style-type: none"> <li>• confirmation and engineering design</li> <li>• confirmation only</li> <li>• none</li> </ul>
Project ID	An identifier that is used to group Orders that represent a unit of functionality that is important to a Buyer. A Project can be used to relate multiple Orders together.	String	16	Optional	Optional	Optional	This value MAY be assigned by the Buyer/Seller to identify a project the order is associated with.
Requested Completion Date	Identifies the Buyer's desired due date (requested delivery date) formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Required	Required	Required	This value MUST be assigned by the Buyer to identify the requested completion date.
Requested Start Date	If specified, identifies the Buyer's desired date for order processing to start. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Optional	Optional	Optional	

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Expedite/Priority	Indicates that expedited treatment is requested and any charges generated in provisioning this request (e.g., additional engineering charges or labor charges if applicable) will be accepted; optionally, can be used to indicate the assigned priority of this order relative to other orders in the Order Management system.	Integer		Optional	Optional	Optional	The valid values for this field will be defined by the Seller as part of the contracting or on-boarding process.
Telecommunication Service Priority/ Restoration Priority	Within the United States, indicates the provisioning and restoration priority as defined under the TSP Service Vendor Handbook.	String	12	Optional	Optional	Optional	The valid values are defined in ATIS OBF document: ATIS-0404001
<b>Buyer Billing information</b>							
Billing Account	Identifies the billing account to which the recurring and non-recurring charges for this request will be billed.	String	13	Conditional	Conditional	Required	- If a billing account already exists, this value SHOULD be provided. - The value of "Existing" MAY be used when the Billing Account was previously established (as opposed to the actual Billing Account number). - If no billing account exists, the billing contact name, email address, phone number, and address MUST be provided.
Billing Contact Name	Identifies the name of the person or office to be contacted on billing matters.	String	50	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established.
Billing Contact Telephone Number	Identifies the telephone number (excluding extension) of the billing contact	String	15	Conditional	Conditional	Conditional	This value is MUST be provided when a Billing Account has not been established.
Billing Contact Telephone Number Extension	Identifies the telephone number extension of the billing contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Billing Contact Email Address	Identifies the electronic mail address of the Billing Contact when a Buyer profile does not already exist.	String	60	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established.
Billing Contact Street Address	Identifies the address of the person or office to be contacted on billing matters.	String	100	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established and the Order is not being Cancelled.
<b>Buyer Order Contact</b>							
Buyer Order Contact Name	Identifies the name of the person or office that is buying the product.	String	50	Required	Required	Required	
Buyer Order Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Order Contact.	String	15	Required	Required	Required	

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Buyer Order Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Order Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Order Contact Email Address	Identifies the electronic mail address of the Buyer Order Contact when a Buyer profile does not already exist.	String	60	Conditional	Conditional	Conditional	This value MUST be provided when the Order Contact doesn't have a profile in the Seller's system.
<b>Buyer Implementation Contact</b>							
Buyer Implementation Contact Name	Identifies the name of the person or office that will be contacted during the service turn up and implementation. This is typically the person who accepts the service.	String	50	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
Buyer Implementation Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Implementation Contact	String	15	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
Implementation Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Implementation Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Implementation Contact Email Address	Identifies the electronic mail address of the Buyer Implementation Contact.	String	60	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
<b>Buyer Technical Contact</b>							
Buyer Technical Contact Name	Identifies the name of the person or office that will be contacted during the service design for additional questions or concerns.	String	50	Required	Optional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Buyer Technical Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Technical Contact Name	String	15	Required	Optional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Buyer Technical Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Technical Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Technical Contact Email Address	Identifies the electronic mail address of the Buyer Technical Contact.	String	60	Required	Conditional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Pricing Method	The pricing authority to be used to price the products on this order. Choice of Tariff, Contract, Individual Case Basis (ICB), Other	Enumeration		Optional	Optional	Optional	Enumeration Literals: <ul style="list-style-type: none"> <li>• Contact</li> <li>• Tariff</li> <li>• IndividualCaseBasis</li> <li>• Other</li> </ul>
Pricing Reference	The value associated with the Pricing Method selected (e.g. a contract or tariff id).	String	25	Optional	Optional	Optional	This value MAY be provided on New, Amend or Change Order to identify an associated contract or tariff. This value is prohibited on Disconnect or Cancel Order.
Pricing Term	The length of the contract in months	Integer	3	Optional	Optional	Optional	The length of the contract in months. Example: 12, 60, 120
Promotion ID	A set of characters identifying a promotion. Company specific.	String	18	Optional	Optional	Optional	

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Order Type	Identifies the type of MEF service or service component that is being ordered.	Enumeration		Required	Required	Required	For this version of the document, the following values exist: - UniProduct - AccessElineProduct  Only 1 Product may be ordered on a single Order request.
Note	Free form text to clarify or explain the order	String	300	Optional	Optional	Optional	
Serviceability Response Identifier	Value that associates this order with a previously assigned serviceability response	String	20	Optional	Optional	Optional	
Ordering line items for Access E-Line Product:							
Order Item Action	Action to be applied to this portion of the Order	Enumeration		Required	Required	Required	The valid values for this field are: <ul style="list-style-type: none"> <li>• install</li> <li>• change</li> <li>• disconnect</li> <li>• no change</li> </ul>
Buyer Order Item Reference	A reference to an item on the Order	String	4	Required	Required	Required	This value is provided by the Buyer.
Seller OVC Identifier	The circuit identifier that the Seller uses to refer to this OVC.	String	45	Optional	Optional	Required	This value is REQUIRED when requesting a Change to an existing service.
Buyer OVC Identifier	The circuit identifier that the Partner/Access Provider (Buyer) uses to refer to this OVC.	String	45	Optional	Optional	Optional	
Product Offering	An identifier of the Partner/Access Provider (Seller) Product Offering (product catalog item) that the Buyer is ordering at the Access E-LineP level.	String	25	Optional	Optional	Optional	This value may be further broken into both an ID and an optional URL reference.
SVLAN Identifier	The S-VLAN ID to be used for this service.	Integer	4	Optional	Optional	Optional	
OVC Maximum Frame Size (MFS)	Per MEF 26.2, the maximum frame size provides the upper bounds on the length of an ingress frame. An integer greater or equal to 1526.	Integer		Optional	Optional	Optional	
Color Forwarding Enable Indicator	Color Forwarding is an OVC attribute defining the relationship between the color on an egress ENNI frame and the color of the corresponding ingress ENNI Frame or Service Frame. For ordering, this attribute identifies if the Buyer requests Color Forwarding.	boolean		Optional	Optional	Optional	Valid Values = True or False
Class of Service Name (COS)	The name of the designation given to one or more sets of performance objectives and associated parameters by the Seller. (e.g., "Gold")	String	20	Optional	Optional	Optional	For this version of the document, only one COS can be provided on the Order.

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
ENNI Reference:							Either an Ordered ENNI Reference or an Existing ENNI Reference MUST be provided to indicate which ENNI the Access E-Line should be associated to.
Existing ENNI Reference							
Seller ENNI Identifier	The circuit identifier that the Seller uses to refer to this ENNI.	String	45	Conditional	Conditional	Required	Required when the ENNI Identifier has been assigned by the Seller.
Buyer ENNI Identifier	The circuit identifier that the Buyer uses to refer to this ENNI.	String	45	Optional	Optional	Optional	
Ordered ENNI Reference:							
Buyer Order Reference	In the case where the Seller has not yet assigned the Seller ENNI Identifier, this field identifies the in-progress Order associated with the ENNI. Either the Order ID or the Buyer Purchase Order Number can be provided.	String	45	Conditional	Conditional	Conditional	Required when the ENNI Identifier has not been assigned by the Seller.
ENNI Ingress Bandwidth Profile							
Committed Information Rate	As defined in MEF 26.2, this value is expressed in bits per second. When Ordering, the value is expressed as a numeric value followed by Mbps or Gbps	Integer	4	Optional	Optional	Optional	Integer value must be followed by either Mbps or Gbps.
Committed Burst Size	As defined in MEF 26.2, this value is expressed as bytes.	Integer		Optional	Optional	Optional	The value must be greater than 0 if CIR is greater than 0.
Excess Information Rate	As defined in MEF 26.2, this value is expressed in bits per second. When Ordering, the value is expressed as a numeric value followed by Mbps or Gbps	Integer	4	Optional	Optional	Optional	Integer value must be followed by either Mbps or Gbps.
Excess Burst Size	As defined in MEF 26.2, this value is expressed as bytes.	Integer		Optional	Optional	Optional	The value MUST be greater than 0 if EIR is greater than 0.
Color Mode	This enumeration indicates whether the Color Identifier of the Service Frame is considered by the Bandwidth Profile Algorithm	Enumeration		Optional	Optional	Optional	Valid Values: <ul style="list-style-type: none"> <li>COLOR_AWARE</li> <li>COLOR_BLIND:</li> </ul>
Coupling Flag	This value determines whether or not overflow tokens not used for ENNI Frames declared Green can be used as Yellow tokens.	boolean		Optional	Optional	Optional	Valid Values: 0 or 1

Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
<b>ENNI Site Contact</b>							
Site Contact Name	Identifies the name of the person at the ENNI location that is the local contact. This contact will primarily be used for gaining access to the site.	String	50	Optional	Optional	Optional	
Site Contact Telephone Number	Identifies the telephone number (excluding extension) of the Site Contact.	String	15	Optional	Optional	Optional	
Site Telephone Number Extension	Identifies the telephone number extension of the Site Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Site Contact Email Address	Identifies the electronic mail address of the Site Contact.	String	60	Optional	Optional	Optional	
<b>ENNI Alternate Site Contact</b>							
Site Contact Name	Identifies the name of an alternate contact at the ENNI location. This contact will primarily be used for gaining access to the site.	String	50	Optional	Optional	Optional	
Site Contact Telephone Number	Identifies the telephone number (excluding extension) of the alternate Site Contact.	String	15	Optional	Optional	Optional	
Site Telephone Number Extension	Identifies the telephone number extension of the alternate Site Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Site Contact Email Address	Identifies the electronic mail address of the alternate Site Contact.	String	60	Optional	Optional	Optional	
<b>UNI Reference:</b>							Either an Ordered UNI Reference or an Existing UNI Reference MUST be provided to indicate which UNI the Access E-Line should be associated to.
<b>Existing UNI Reference:</b>							
Seller UNI Identifier	The circuit identifier that the Seller uses to refer to this UNI.	String	45	Conditional	Conditional	Required	Required when the UNI Identifier has been assigned by the Seller.
Buyer UNI Identifier	The circuit identifier that the Buyer uses to refer to this UNI.	String	45	Optional	Optional	Optional	
<b>Ordered UNI Reference:</b>							
Buyer Order Reference	In the case where the UNI is being ordered on a separate Order and the Seller has not yet assigned the Seller UNI Identifier, this field identifies the in-progress Order associated with this UNI. Either the Order ID or the Buyer Purchase Order Number can be provided.	String	45	Conditional	Conditional	Conditional	For the conditional cases, this value MUST be provided when the Seller UNI Identifier is not provided.
Order Item Reference	The association of the UNI to an item on this Order.	String	4	Conditional	Conditional	Conditional	The value MUST be provided when the UNI is being ordered as part of the Access E-Line order.
<b>UNI Ingress Bandwidth Profile</b>							



Order Attribute	Description	Data Type	Max Length	Access-E-Line			Requirements
				New Order	Amend In-Progress Order	Change Order	
Committed Information Rate	As defined in MEF 10.3, this value is expressed in bits per second. When Ordering, the value is expressed as a numeric value followed by Mbps or Gbps	Integer	4	Optional	Optional	Optional	Integer value must be followed by either Mbps or Gbps.
Committed Burst Size	As defined in MEF 10.3, this value is expressed as bytes.	Integer		Optional	Optional	Optional	The value must be greater than 0 when the CIR is greater than 0.
Excess Information Rate	As defined in MEF 10.3, this value is expressed in bits per second. When Ordering, the value is expressed as a numeric value followed by Mbps or Gbps	Integer	4	Optional	Optional	Optional	Integer value must be followed by either Mbps or Gbps.
Excess Burst Size	As defined in MEF 10.3, this value is expressed as bytes.	Integer		Optional	Optional	Optional	The value MUST be greater than 0 when the EIR is greater than 0.
Color Mode	This enumeration indicates whether the Color Identifier of the Service Frame is considered by the Bandwidth Profile Algorithm	Enumeration		Optional	Optional	Optional	Valid Values: <ul style="list-style-type: none"> <li>COLOR_AWARE</li> <li>COLOR_BLIND:</li> </ul>
Coupling Flag	This value determines whether or not overflow tokens not used for ENNI Frames declared Green can be used as Yellow tokens.	boolean		Optional	Optional	Optional	Valid Values: 0 or 1

Table 4 – Access E-Line Ordering Attributes (Use Cases 1, 2, 5)

## 8.2 UNI Ordering Attributes

The below table defines the attributes associated with the Create New Order (Use Case 1), Create Change Order (Use Case 2) and Amend In-Progress/Pending Order (Use Case 5) for ordering of a UNI. A UNI may be ordered either as a standalone entity or in combination with an Access E-Line order.

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Order Header Information							
Order ID	Unique identifier for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Prohibited	Required	Prohibited	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order.
Buyer (Service Provider) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller. Specifically, the ID of the Service Provider (Buyer) organization placing the order.	String	25	Required	Required	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Seller (Partner/Access Provider) ID	A Party Role played by an organization that provides products and services to a Buyer. Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	Required	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	Required	Required	The original value MUST be maintained for the life of the Order. This value may be reused after two years from the completion date of the original order.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Required	Required	Required	This value MUST be assigned by the Buyer and retained by the Seller.
Order Date	Date when the order was created	dateTime		Required	Required	Required	This value MUST be assigned by the Buyer when submitting an Order.
Order Activity	The type of order, as defined by the business (e.g., install, change, disconnect).	Enumeration		Required	Required	Required	The valid values for this field are: • install • change • disconnect
Desired Responses	The type of order responses that the Buyer wishes to receive from the Seller	Enumeration		Required	Required	Required	The valid values for this field are: • confirmation and engineering design • confirmation only • none
Project ID	An identifier that is used to group Orders that represent a unit of functionality that is important to a Buyer. A Project can be used to relate multiple Orders together.	String	16	Optional	Optional	Optional	This value MAY be assigned by the Buyer/Seller to identify a project the order is associated with.
Requested Completion Date	Identifies the Buyer's desired due date (requested delivery date) formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Required	Required	Required	This value MUST be assigned by the Buyer to identify the requested completion date.
Requested Start Date	If specified, identifies the Buyer's desired date for order processing to start. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Optional	Optional	Optional	

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Expedite/Priority	Indicates that expedited treatment is requested and any charges generated in provisioning this request (e.g., additional engineering charges or labor charges if applicable) will be accepted; optionally, can be used to indicate the assigned priority of this order relative to other orders in the Order Management system.	Integer		Optional	Optional	Optional	The valid values for this field will be defined by the Seller as part of the contracting or on-boarding process.
Telecommunication Service Priority/ Restoration Priority	Within the United States, indicates the provisioning and restoration priority as defined under the TSP Service Vendor Handbook.	String	12	Optional	Optional	Optional	The valid values are defined in ATIS OBF document: ATIS-0404001
<b>Buyer Billing information</b>							
Billing Account	Identifies the billing account to which the recurring and non-recurring charges for this request will be billed.	String	13	Conditional	Conditional	Conditional	- If a billing account already exists, this value SHOULD be provided. - The value of "Existing" MAY be used when the Billing Account was previously established (as opposed to the actual Billing Account number). - If no billing account exists, the billing contact name, email address, phone number, and address MUST be provided.
Billing Contact Name	Identifies the name of the person or office to be contacted on billing matters.	String	50	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established and the Order is not being Cancelled.
Billing Contact Telephone Number	Identifies the telephone number (excluding extension) of the billing contact	String	15	Conditional	Conditional	Conditional	This value is MUST be provided when a Billing Account has not been established.
Billing Contact Telephone Number Extension	Identifies the telephone number extension of the billing contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Billing Contact Email Address	Identifies the electronic mail address of the Billing Contact when a Buyer profile does not already exist.	String	60	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established.
Billing Contact Street Address	Identifies the address of the person or office to be contacted on billing matters.	String	100	Conditional	Conditional	Conditional	This value MUST be provided when a Billing Account has not been established.
<b>Buyer Order Contact</b>							
Buyer Order Contact Name	Identifies the name of the person or office that is buying the product.	String	50	Required	Required	Required	This value is REQUIRED when the Order is not being Cancelled.
Buyer Order Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Order Contact.	String	15	Required	Required	Required	This value is REQUIRED when the Order is not being Cancelled.
Buyer Order Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Order Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Buyer Order Contact Email Address	Identifies the electronic mail address of the Buyer Order Contact when a Buyer profile does not already exist.	String	60	Conditional	Conditional	Conditional	This value is REQUIRED when the Order Contact doesn't have a profile in the Seller's system.
<b>Buyer Implementation Contact</b>							
Buyer Implementation Contact Name	Identifies the name of the person or office that will be contacted during the service turn up and implementation. This is typically the person who accepts the service.	String	50	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
Buyer Implementation Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Implementation Contact	String	15	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
Implementation Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Implementation Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Implementation Contact Email Address	Identifies the electronic mail address of the Buyer Implementation Contact.	String	60	Required	Conditional	Optional	When Amending an Order with an Activity of "install", this value is REQUIRED.
<b>Buyer Technical Contact</b>							
Buyer Technical Contact Name	Identifies the name of the person or office that will be contacted during the service design for additional questions or concerns.	String	50	Required	Optional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Buyer Technical Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Technical Contact Name	String	15	Required	Optional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Buyer Technical Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Technical Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Technical Contact Email Address	Identifies the electronic mail address of the Buyer Technical Contact.	String	60	Required	Conditional	Optional	This value MUST be provided by the Buyer when the Order activity is "install". This information MAY be provided on Change activity. This information is prohibited on Disconnect and Cancel activity.
Pricing Method	The pricing authority to be used to price the products on this order. Choice of Tariff, Contract, Individual Case Basis (ICB), Other	Enumeration		Optional	Optional	Optional	Enumeration Literals: <ul style="list-style-type: none"> <li>• Contact</li> <li>• Tariff</li> <li>• IndividualCaseBasis</li> <li>• Other</li> </ul>
Pricing Reference	The value associated with the Pricing Method selected (e.g. a contract or tariff id).	String	25	Optional	Optional	Optional	This value MAY be provided on New, Amend or Change activity to identify an associated contract or tariff. This value is prohibited on Disconnect or Cancel activity.
Pricing Term	The length of the contract in months	Integer	3	Optional	Optional	Optional	The length of the contract in months. Example: 12, 60, 120

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Promotion ID	A set of characters identifying a promotion. Company specific.	String	18	Optional	Optional	Optional	
Order Type	Identifies the type of MEF service or service component that is being ordered.	Enumeration		Required	Required	Required	For this version of the document, the following values exist: - UniProduct - AccessEplProduct  Only 1 Product may be ordered on a single Order request.
Note	Free form text to clarify or explain the order	String	300	Optional	Optional	Optional	
Serviceability Response Identifier	Value that associates this order with a previously assigned serviceability response.	String	20	Optional	Optional	Optional	
Ordering line items for UNI Product:							
Product Offering	An identifier of the Partner/Access Provider (Seller) Product Offering (product catalog item) that the Buyer is ordering.	String	25	Optional	Optional	Optional	This value may be further broken into both an ID and an optional URL reference.
Existing UNI Reference							
Seller UNI Identifier	The circuit identifier that the Seller uses to refer to this UNI.	String	45	Optional	Conditional	Required	Required when the UNI Identifier has been assigned by the Seller; otherwise Optional.
Buyer UNI Identifier	The circuit identifier that the Buyer uses to refer to this UNI.	String	45	Optional	Optional	Optional	
Physical Layer							
Physical Layer	The layer (layer 1) that provides transparent transmission of a bit stream over a circuit built from some physical communications medium.	Enumeration		Required	Optional	Optional	Enumeration list will be based on MEF specifications and IEEE Std 802.3 Sample values are: "10Base-T", "100BASE-TX", "100BASE-FX", "1000BASE-T", "1000BASE-SX", "1000BASE-LX", "10GBASE-SR", "10GBASE-SW", "10GBASE-LR", "10GBASE-LX4", "10GBASE-LW", "10GBASE-ER", "10GBASE-EW"
Synchronous Mode Enabled	Identifies if the synchronous transmissions are to proceed at a constant rate.	boolean		Optional	Optional	Optional	Valid Values = True or False
Number of Links	The number of links supporting the UNI.	Integer	2	Optional	Optional	Optional	
Token Share Enabled?	Identifies whether a given UNI is capable of sharing tokens across Bandwidth Profile Flows in an Envelope. MEF valid values are Enabled or Disabled.	boolean		Optional	Optional	Optional	Valid Values = True or False  This is an optional field and must be set to "True" when Enabling is requested. Otherwise, the default setting is Disabled.
UNI Resiliency	Enumeration: "NONE", "2_LINK_ACTIVE_STANDBY", "ALL_ACTIVE", "OTHER"	Enumeration		Optional	Optional	Optional	

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
UNI Maximum Service Frame Size (MFS)	Indicates the maximum service frame size that can be reliably processed at the UNI level.  An integer greater or equal to 1522, per MEF 26.2.	Integer	5	Optional	Optional	Optional	
All-to-One Bundling	All-to-One Bundling can be either Enabled or Disabled. A value of True would equate to "Enabled".	boolean		Optional	Optional	Optional	Valid Values = True or False
Link OAM Enabled	Link OAM enables the operator to monitor and troubleshoot a single Ethernet link. For ordering, this is an optional parameter that may be requested.	boolean		Optional	Optional	Optional	Valid Values = True or False
UNI Maintenance Entity Group (MEG) Enabled	Request for monitoring of a UNI. For ordering, this is an optional parameter that may be requested.	boolean		Optional	Optional	Optional	Valid Values = True or False
E-LMI Enabled	Indicates the desire for management of the customer interface. For ordering, this is an optional parameter that may be requested.	boolean		Optional	Optional	Optional	Valid Values = True or False
UNI L2CP Address Set	Identifies the discard/pass action for all non-peered layer two control protocols. Enumeration: "CTA", "CTB" or "CTB-2"	Enumeration		Optional	Optional	Optional	Valid Values = "CTA", "CTB" or "CTB-2"
UNI L2CP Peering	Can be either an empty list, or a list of entries identifying protocols to be peered where each entry consists of {Destination Address, Protocol Identifier} or {Destination Address, Protocol Identifier, Link Identifier}.	Array		Optional	Optional	Optional	This will be separated into component parts.
<b>UNI Service Site Information</b>							
Site Company Name	The name of the company that is located at the Service location. This may be different from the name of the Buyer that ordered services at that Service Site.	String	25	Required	Conditional	Optional	This value MUST be provided when requested a New UNI.
End Customer Name	The name of the end (retail) customer for the UNI.	String	25	Optional	Optional	Optional	
Site Name	A name by which the service site is known.	String	60	Optional	Optional	Optional	
Site Description	A description for the service site	String	300	Optional	Optional	Optional	
Additional Site Information	Additional information about the Site or special delivery information. Free-form text input.	String	100	Optional	Optional	Optional	

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Site Address Type	Identifies the type of address to be provided for the service location. Sections below are required based on Site Address Type selected.	Enumeration		Required	Conditional	Conditional	Valid Values: <ul style="list-style-type: none"> <li>• FieldedAddress</li> <li>• FormattedAddress</li> <li>• AddressReference</li> <li>• Geographic Point</li> </ul>
FieldedAddress							
Street Number	Number identifying a property on a public street. It may be combined with Street Number Last for ranged addresses	String	10	Optional	Optional	Optional	
Street Number Suffix	The suffix of the first street number (in a street number range) or the suffix for the street number if there is no range.	String	10	Optional	Optional	Optional	
Street Number Last	Last number in a range of street numbers allocated to an address.	String	10	Optional	Optional	Optional	
Street Name	The name of the street or other street type.	String	60	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.
Street Type	The type of street (e.g., Street, St., Road, Rd., Alley).	String	25	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.
Street Suffix	A modifier denoting a relative direction.	String	2	Optional	Optional	Optional	
Sub Unit Type	The type of subunit (e.g., Flat, Suite, Tower, Unit).	String	25	Optional	Optional	Optional	
Sub Unit Number	The discriminator used for the subunit, often just a simple number but may also be a range.	String	10	Optional	Optional	Optional	
Level Type	Describes level types within a building (e.g., Floor)	String	25	Optional	Optional	Optional	
Level Number	Used where a Level Type has been populated. This value is may be a simple number or description, such as "Basement".	String	25	Optional	Optional	Optional	
Building Name	Allows for buildings with well-known names to be used in an address.	String	60	Optional	Optional	Optional	
Private Street Name	Private streets internal to a property (e.g., a university) with an internal name not recorded by the land title office.	String	60	Optional	Optional	Optional	
Locality	A bounded locality within a city, town or shire principally of urban character.	String	50	Optional	Optional	Optional	
City	The city that the address is in.	String	50	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.

Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
State or Province	The state or province that the address is in.	String	50	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.
Postal Code	A descriptor for a postal delivery area, used to speed and simplify the delivery of mail.	String	6	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.
Postal Code Extension	The four-digit extension on an American postal code, what comes after the hyphen when specified.	String	4	Optional	Optional	Optional	This value MAY only be populated when the associated Postal Code is provided.
Country	The country that the address is in.	String	50	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FieldedAddress and the Order is not being cancelled or disconnected.
FormattedAddress							
Formatted Address Line1	A formatted address line that contains a non-fielded street address.	String	60	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FormattedAddress and the Order is not being cancelled or disconnected.
Formatted Address Line2	A formatted address line that contains a non-fielded street address, sub-address (e.g. Suite number), etc.	String	60	Optional	Optional	Optional	
Locality	A bounded locality within a city, town or shire principally of urban character.	String	50	Optional	Optional	Optional	
City	The city that the address is in.	String	50	Optional	Optional	Optional	
State or Province	The state or province that the address is in.	String	50	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FormattedAddress and the Order is not being cancelled or disconnected.
Postal Code	A descriptor for a postal delivery area, used to speed and simplify the delivery of mail.	String	6	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FormattedAddress and the Order is not being cancelled or disconnected.
Postal Code Extension	The four-digit extension on an American postal code, what comes after the hyphen when specified.	String	4	Optional	Optional	Optional	This value MAY only be populated when the associated Postal Code is provided.
Country	The country that the address is in.	String	50	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = FormattedAddress and the Order is not being cancelled or disconnected.
AddressReference							
Address Reference ID	A reference to an address by id; this would include such things CLLI Codes or Seller-assigned address identifiers.	String	60	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = AddressReference
Geographic Point							



Order Attribute	Description	Data Type	Max Length	UNI			Requirements
				New Order	Amend In-Progress Order	Change Order	
Longitude/Latitude	A geometric point on earth, which can include a latitude, longitude, and elevation in "decimal degrees" format.	String	10	Conditional	Conditional	Conditional	This value is REQUIRED when the Address Type = GeographicPoint
<b>UNI Site Contact</b>							
Site Contact Name	Identifies the name of the person at the specific site location that is the local contact. This contact will primarily be used for gaining access to the site.	String	50	Optional	Optional	Optional	
Site Contact Telephone Number	Identifies the telephone number (excluding extension) of the Site Contact.	String	15	Optional	Optional	Optional	
Site Contact Telephone Number Extension	Identifies the telephone number extension of the Site Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Site Contact Email Address	Identifies the electronic mail address of the Site Contact.	String	60	Optional	Optional	Optional	
<b>Alternate UNI Site Contact</b>							
Site Contact Name	Identifies the name of an alternate contact at the specific site location. This contact will primarily be used for gaining access to the site.	String	50	Optional	Optional	Optional	
Site Contact Telephone Number	Identifies the telephone number (excluding extension) of the alternate Site Contact.	String	15	Optional	Optional	Optional	
Site Contact Telephone Number Extension	Identifies the telephone number extension of the alternate Site Contact	String	6	Optional	Optional	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Site Contact Email Address	Identifies the electronic mail address of the alternate Site Contact.	String	60	Optional	Optional	Optional	

Table 5 – UNI Ordering Attributes (Use Cases 1, 2, 5)

### 8.3 Cancel In-Progress/Pending Order Use Case

The below table defines the attributes for the Cancel In-Progress/Pending Order Use Case (Use Case 6). This is a notification type process from the Seller to the Buyer that is initiated when the Seller cancels a Buyer's order. There is no response expected from the Buyer and no further Order activity occurs after this process step.

Order Attribute	Description	Data Type	Max Length	Cancel Pending Order	Requirements
<b>Order Header Information</b>					
Order ID	Unique identifier for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Required	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order.

Order Attribute	Description	Data Type	Max Length	Cancel Pending Order	Requirements
Buyer (Service Provider) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller. Specifically, the ID of the Service Provider (Buyer) organization placing the order.	String	25	Required	This value MUST match the value used on the Order request when initiating any other Ordering Use Case.
Seller (Partner/Access Provider) ID	A Party Role played by an organization that provides products and services to a Buyer. Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	This value MUST match the value used on the Order request when initiating any other Ordering Use Case.
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	The original value MUST be maintained for the life of the Order. This value may be reused after two years from the completion date of the original order.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Optional	This value MUST be assigned by the Buyer and retained by the Seller.
Order Date	Date when the order was created	dateTime		Required	This value MUST be assigned by the Buyer when submitting an Order.
Order Cancellation Date	Identifies the date the Seller cancelled the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Required	The value MUST be assigned by the Seller when cancelling an Order
Cancellation Reason	An optional free-form text field for the Seller to provide additional information regarding the reason for the cancellation.	String	300	Optional	

Table 6 – Cancel Order Ordering Attributes - Use Case 6

## 8.4 Disconnect Use Case Attributes

The below table defines the attributes for the Create Disconnect Order Use Case (Use Case 3). As disconnect processing is extremely streamlined, the attributes required for this request are limited. This is the only Use Case that supports the inclusion of more than one MEF Service on the same Order. However, it is recommended that no more than 20 order items be included on the same Order due to the complexity of Order management within the Seller's environment.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
<b>Order Header Information</b>					
Order ID	Unique identified for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Prohibited	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order. This value MUST NOT be populated on the initial submission of a Disconnect Order.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
Buyer (Service Provider) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller. Specifically, the ID of the Service Provider (Buyer) organization placing the order.	String	25	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.
Seller (Partner/Access Provider) ID	A Party Role played by an organization that provides products and services to a Buyer.  Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	This value MUST match the value used on the New Order request when initiating any other Ordering Use Case.
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	The original value MUST be maintained for the life of the Order. This value may be reused after two years from the completion date of the original order.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Required	This value MUST be assigned by the Buyer and retained by the Seller.
Order Date	Date when the order was created	dateTime		Required	This value MUST be assigned by the Buyer when submitting an Order.
Order Activity	The type of order, as defined by the business (e.g., install, change, disconnect).	Enumeration		Required	The valid values for this field are: <ul style="list-style-type: none"> <li>• install</li> <li>• change</li> <li>• disconnect</li> </ul> For this Use Case, the only correct value would be "disconnect".
Desired Responses	The type of order responses that the Buyer wishes to receive from the Seller.	Enumeration		Required	The valid values for this field are: <ul style="list-style-type: none"> <li>• confirmation and engineering design</li> <li>• confirmation only</li> <li>• none</li> </ul> For this Use Case, the value of "confirmation and engineering design" SHOULD NOT be used.
Project ID	An identifier that is used to group Orders that represent a unit of functionality that is important to a Buyer. A Project can be used to relate multiple Orders together.	String	16	Optional	This value MAY be assigned by the Buyer/Seller to identify a project the order is associated with.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
Requested Completion Date	Identifies the Buyer's desired due date (requested delivery date) formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Required	This value MUST be assigned by the Buyer to identify the requested completion date.
Requested Start Date	If specified, identifies the Buyer's desired date for order processing to start. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Optional	
Expedite/Priority	Indicates that expedited treatment is requested and any charges generated in provisioning this request (e.g., additional engineering charges or labor charges if applicable) will be accepted; optionally, can be used to indicate the assigned priority of this order relative to other orders in the Order Management system.	Integer		Prohibited	This value MUST NOT be populated on Disconnect Orders.
<b>Buyer Billing information</b>					
Billing Account	Identifies the billing account to which the recurring and non-recurring charges for this request will be billed.	String	13	Optional	- If a billing account already exists, this value SHOULD be provided. - The value of "Existing" MAY be used when the Billing Account was previously established (as opposed to the actual Billing Account number).
Billing Contact Name	Identifies the name of the person or office to be contacted on billing matters.	String	50	Conditional	This value is REQUIRED when a Billing Account has not been established.
Billing Contact Telephone Number	Identifies the telephone number (excluding extension) of the billing contact	String	15	Conditional	This value is REQUIRED when a Billing Account has not been established.
Billing Contact Telephone Number Extension	Identifies the telephone number extension of the billing contact	String	6	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Billing Contact Email Address	Identifies the electronic mail address of the Billing Contact when a Buyer profile does not already exist.	String	60	Conditional	This value is REQUIRED when a Billing Account has not been established.
<b>Buyer Order Contact</b>					
Buyer Order Contact Name	Identifies the name of the person or office that is buying the product.	String	50	Required	This value is REQUIRED when the Order is not being Cancelled.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
Buyer Order Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Order Contact.	String	15	Required	This value is REQUIRED when the Order is not being Cancelled.
Buyer Order Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Order Contact.	String	6	Optional	This value MAY only be populated when the associated Telephone Number is provided.
Buyer Order Contact Email Address	Identifies the electronic mail address of the Buyer Order Contact when a Buyer profile does not already exist.	String	60	Conditional	This value is REQUIRED when the Order Contact doesn't have a profile in the Seller's system.
<b>Buyer Implementation Contact</b>					
Buyer Implementation Contact Name	Identifies the name of the person or office that will be contacted during the service turn up and implementation. This is typically the person who accepts the service.	String	50	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Buyer Implementation Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Implementation Contact.	String	15	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Implementation Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Implementation Contact.	String	6	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Buyer Implementation Contact Email Address	Identifies the electronic mail address of the Buyer Implementation Contact.	String	60	Prohibited	This value MUST NOT be populated on Disconnect Orders.
<b>Buyer Technical Contact</b>					
Buyer Technical Contact Name	Identifies the name of the person or office that will be contacted during the service design for additional questions or concerns.	String	50	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Buyer Technical Contact Telephone Number	Identifies the telephone number (excluding extension) of the Buyer Technical Contact Name.	String	15	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Buyer Technical Contact Telephone Number Extension	Identifies the telephone number extension of the Buyer Technical Contact.	String	6	Prohibited	This value MUST NOT be populated on Disconnect Orders.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
Buyer Technical Contact Email Address	Identifies the electronic mail address of the Buyer Technical Contact.	String	60	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Pricing Method	The pricing authority to be used to price the products on this order. Choice of Tariff, Contract, Individual Case Basis (ICB), Other	Enumeration		Prohibited	This value MUST NOT be populated on Disconnect Orders.
Pricing Reference	The value associated with the Pricing Method selected (e.g. a contract or tariff id).	String	25	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Pricing Term	The length of the contract in months.	Integer	3	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Promotion ID	A set of characters identifying a promotion. Company specific.	String	18	Prohibited	This value MUST NOT be populated on Disconnect Orders.
Order Type	Identifies the type of MEF service or service component that is being ordered.	Enumeration		Prohibited	This value MUST NOT be populated on Disconnect Orders.
Note	Free form text to clarify or explain the order.	String	300	Optional	
Serviceability Response Identifier	Value that associates this order with a previously assigned serviceability response.	String	20	Prohibited	This value MUST NOT be populated on Disconnect Orders.

Order Attribute	Description	Data Type	Max Length	Disconnect	Requirements
<b>Items to be deleted</b>					
Partner/Access Provider (Seller) Network Identifier	One or more of the following Seller-assigned values may be included: <ul style="list-style-type: none"> <li>· OVC Identifier</li> <li>· EVC Identifier</li> <li>· UNI Identifier</li> <li>· ENNI Identifier</li> </ul>	String	45	Required	<p>If an OVC Identifier is provided, then the Seller will disconnect the OVC connection ONLY.</p> <p>If the Buyer wishes to disconnect the UNI or ENNI circuit as well, then the UNI ID and/or ENNI ID must also be provided as an Order Item or separately provided on a subsequent Order.</p> <p>If an EVC Identifier is provided, then the Seller will disconnect the EVC Connection ONLY.</p> <p>If the Buyer wishes to disconnect any of the UNI components, then the UNI IDs must also be provided as Order items or provided separately on subsequent Orders.</p>
Service Provider (Buyer) Network Identifier	One or more of the following Buyer-assigned values may be included: <ul style="list-style-type: none"> <li>· Buyer OVC Identifier</li> <li>· Buyer EVC Identifier</li> <li>· Buyer UNI Identifier</li> <li>· Buyer ENNI Identifier</li> </ul>	String	45	Optional	This information is informational to the Seller and not required in order to disconnect the service or service component.

Table 7 – Disconnect Ordering Attributes - Use Case 3

## 8.5 Query In-Progress/Pending Order Use Case Attributes

The below table defines the attributes associated with Query In-Progress/Pending Order Status (Use Case 4). The Buyer initiates this Use Case to obtain Order and Order Item Status. The table is broken into which attributes are available on the request for status and which should be provided on the Seller’s response.

Order Attribute	Description	Data Type	Max Length	Query Pending Order		Requirements
				Request	Response	
Order ID	Unique identifier for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Required	Required	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order.
Service Provider (Buyer) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller.	String	25	Required	Required	This value MUST match the value used on the Order request when

Order Attribute	Description	Data Type	Max Length	Query Pending Order		Requirements
				Request	Response	
	Specifically, the ID of the Service Provider (Buyer) organization placing the order.					initiating any other Ordering Use Case.
Partner/Access Provider (Seller) ID	A Party Role played by an organization that provides products and services to a Buyer. Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	Required	This value MUST match the value used on the Order request when initiating any other Ordering Use Case.
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	Required	This value MUST match the value used on the Order request.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Prohibited	Required	This value MUST be provided by the Seller when responding to a request.
Project ID	An identifier that is used to group Orders that represent a unit of functionality that is important to a Buyer. A Project can be used to relate multiple Orders together.	String	16	Prohibited	Optional	The Seller SHOULD return the Project ID if it is populated on the Order.
Requested Completion Date	Identifies the Buyer's requested completion date for the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Prohibited	Required	This value MUST be provided by the Seller when responding to a request.
Expected Completion Date	Identifies the date the Seller expects to complete the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Prohibited	Conditional	This value SHOULD be provided by the Seller when the date is known. This value SHOULD NOT be provided when the Order State = Cancelled.
Completion Date	Identifies the date the Seller completed the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Prohibited	Optional	This value MAY be provided if the Seller supports a query on a Completed order.
Order Status	The states as defined by TMF622 will be used to convey Order Status.	Enumeration		Prohibited	Required	TMF622 State Values: <ul style="list-style-type: none"> <li>- Acknowledged</li> <li>- InProgress</li> <li>- Cancelled</li> <li>- Completed</li> <li>- Rejected</li> <li>- Pending</li> <li>- Held</li> <li>- Failed</li> <li>- Partial</li> </ul>



Order Attribute	Description	Data Type	Max Length	Query Pending Order		Requirements
				Request	Response	
Order Item Status						This is an optional array that allows the Seller to provide status on each Order Item.
Order Item Reference	A reference to the item on the Order associated with the Item Status	String	4	Prohibited	Required	This value MUST be provided when the Order Item Status is provided on the Response.
Order Item Status	The states as defined by TMF622 will be used to convey Order Item Status.	Enumeration		Prohibited	Required	TMF622 State Values: <ul style="list-style-type: none"> <li>- Acknowledged</li> <li>- InProgress</li> <li>- Cancelled</li> <li>- Completed</li> <li>- Rejected</li> <li>- Pending</li> <li>- Held</li> <li>- Failed</li> <li>- Partial</li> </ul>

Table 8 – Query In-Progress/Pending Order Ordering Attributes (Use Cases 4)

## 8.6 Notify Order Status & Complete Order Use Case Attributes

The below table defines the attributes associated with Notify Order Status (Use Case 7) and Complete Order (Use Case 8). The Seller initiates this Use Case to notify the Buyer of changes in Order Status and to provide additional Seller-assigned order information. Each notification updates previous information about the Order. For example, if errors were provided on Notification #1, and when Notification #2 is provided, it did not contain any errors, then the Order would no longer have errors that the Buyer needed to address from Notification #1.

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
Order ID	Unique identifier for the order that is generated by the Seller when the order is initially accepted via an API.	String	45	Required	This value MUST be provided by the Seller on all response messages. This value MUST remain the same for the life of the Order.
Service Provider (Buyer) ID	A Party Role played by an Individual or an Organization that buys products and services from a Seller. Specifically, the ID of the Service Provider (Buyer) organization placing the order.	String	25	Required	This value MUST match the value used on the Order request.
Partner/Access Provider (Seller) ID	A Party Role played by an organization that provides products and services to a Buyer. Specifically, the ID of the Partner/Access Provider (Seller) organization receiving the order.	String	25	Required	This value MUST match the value used on the Order request when initiating.

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
Buyer Purchase Order Number	A number that uniquely identifies an order within the Buyer's enterprise.	String	16	Required	This value MUST match the value used on the Order request.
Buyer Order Version	The version number that the Buyer uses to refer to this particular version of the order.	String	2	Required	This value MUST be provided by the Seller when responding to a request.
Notification Type	Identifies the type of notification.	Enumeration		Required	Values are: <ul style="list-style-type: none"> <li>• CANCELLATION</li> <li>• COMPLETION</li> <li>• CONFIGURATION</li> <li>• CONFIRMATION</li> <li>• JEOPARDY</li> <li>• ERROR</li> <li>• STATUS_UPDATE</li> </ul>
Notification Version Number	The version number that the Seller uses to refer to this particular version of the Notification. The initial value is set 01 and is incremented as subsequent Notifications are generated. This value is not associated to the Buyer Order Version.	String	2	Required	This value MUST be incremented on each Notification sent by the Seller to the Buyer.
Correction Order Expected	Indicates if the Notification requires a corrected/amended Order to be submitted to the Seller to resolve issues with the Order.	Boolean		Required	Valid Values: True or False
Correction Order Due Date	Date by which the corrected/amended Order must be sent to the Seller to ensure the existing Order isn't cancelled.	dateTime		Conditional	This value MUST be provided if the Correction Order Expected attribute is "True".
Project ID	An identifier that is used to group Orders that represent a unit of functionality that is important to a Buyer. A Project can be used to relate multiple Orders together.	String	16	Optional	The Seller SHOULD return the Project ID if it is populated on the Order.
Requested Completion Date	Identifies the customer's requested completion date for the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Required	.
Expected Completion Date	Identifies the date the Seller expects to complete the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-	dateTime		Conditional	This value MUST be provided by the Seller when the notification type = CONFIRMATION. This value SHOULD NOT be provided when the Order State = Cancelled; in

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
	MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)				all other scenarios, this value is OPTIONAL.
Completion Date	Identifies the date the Seller completed the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Conditional	This value MUST be provided by the Seller on the COMPLETION Notification.
Order Cancellation Date	Identifies the date the Seller cancelled the Order. Formatted as YYYY-MM-DD (e.g. 1997-07-16) or YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)	dateTime		Conditional	This value MUST be provided by the Seller on the CANCELLATION Notification; it is prohibited in all other Notification types.
Order Status	The states as defined by TMF622 will be used to convey Order Status.	Enumeration		Required	TMF622 State Values: <ul style="list-style-type: none"> <li>- Acknowledged</li> <li>- InProgress</li> <li>- Cancelled</li> <li>- Completed</li> <li>- Rejected</li> <li>- Pending</li> <li>- Held</li> <li>- Failed</li> <li>- Partial</li> </ul>
<b>Seller Order Contact</b>					
Seller Order Contact Name	Identifies the name of the person or office that is handling the order within the Seller's organization.	String	50	Optional	This value MAY be provided by the Seller on any Notification type.
Seller Order Contact Telephone Number	Identifies the telephone number (excluding extension) of the Seller Order Contact.	String	15	Optional	This value MAY be provided by the Seller on any Notification type.
Seller Order Contact Telephone Number Extension	Identifies the telephone number extension of the Seller Order Contact	String	6	Optional	This value MAY be provided by the Seller on any Notification type.
Seller Order Contact Email Address	Identifies the electronic mail address of the Seller Order Contact.	String	60	Optional	This value MAY be provided by the Seller on any Notification type.
Billing Account	Identifies the Billing Account to use to bill the ordered products	String	13	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION; in all other Notification types, this value is OPTIONAL.
Notes	Free form text to clarify or explain the Notification	String	300	Optional	

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
OVC Identifier					This section is only needed when the Order includes an OVC component
Seller OVC Identifier	The circuit identifier that the Seller uses to refer to the OVC.	String	45	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION and the order is associated with an OVC; in all other Notification types, this value is OPTIONAL.
Buyer OVC Identifier	The circuit identifier that the Partner/Access Provider (Buyer) uses to refer to the OVC.	String	45	Optional	
Order Item Reference	A reference to an item on the Order to which this Notification applies	String	4	Conditional	This value MUST be provided when the Seller has not assigned the Seller OVC ID; otherwise this value is OPTIONAL.
EVC Identifier					This section is needed only when the Order includes an EVC component.
Seller EVC Identifier	The circuit identifier that the Seller uses to refer to the EVC.	String	45	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION and the order is associated with an EVC; in all other Notification types, this value is OPTIONAL.
Buyer EVC Identifier	The circuit identifier that the Partner/Access Provider (Buyer) uses to refer to the EVC.	String	45	Optional	
Order Item Reference	A reference to an item on the Order to which this Notification applies	String	4	Conditional	This value MUST be provided when the Seller has not assigned the Seller EVC ID; otherwise this value is OPTIONAL.
UNI Identifier					This section must support an array to allow for multiple UNIs to be contained on the same order. It must also allow a single UNI to be returned.
Seller UNI Identifier	The circuit identifier that the Seller uses to refer to the UNI.	String	45	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION and the order is associated with an UNI; in all other Notification types, this value is OPTIONAL. Multiple values MAY be returned if more than 1 is ordered.
Buyer UNI Identifier	The circuit identifier that the Partner/Access Provider (Buyer) uses to refer to the UNI.	String	45	Optional	

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
Order Item Reference	A reference to an item on the Order to which this Notification applies	String	4	Conditional	This value MUST be provided when the Seller has not assigned the Seller UNI ID; otherwise this value is OPTIONAL.
ENNI Identifier					This section is needed only when the Order includes an ENNI component.
Seller ENNI Identifier	The circuit identifier that the Seller uses to refer to the ENNI.	String	45	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION and the order is associated with an ENNI; in all other Notification types, this value is OPTIONAL.
Buyer ENNI Identifier	The circuit identifier that the Partner/Access Provider (Buyer) uses to refer to the ENNI.	String	45	Optional	
Order Item Reference	A reference to an item on the Order to which this Notification applies	String	4	Conditional	This value MUST be provided when the Seller has not assigned the Seller ENNI ID; otherwise Optional.
S-VLAN Identifier	The S-VLAN ID assigned by the Seller for this service or the first S-VLAN ID when a range is used.	String	4	Conditional	This value MUST be provided by the Seller when the notification type = CONFIGURATION, CONFIRMATION, and COMPLETION and the order is associated with an S-VLAN; in all other Notification types, this value is OPTIONAL.
S-VLAN Identifier Last	The S-VLAN ID assigned by the Seller for this service when a range is used.	String	4	Optional	
Order Message					An optional array of messages associated with the Order.
Code	The code associated with the Message.	String	12	Optional	
Field	The field/attribute on the Order associated with message	String	100	Optional	
Message Information	A description of the error condition or information to be conveyed to the Buyer.	String	150	Required	
Severity	Indicates the type of message.	Enumeration		Required	Valid Values: <ul style="list-style-type: none"> <li>• Error</li> <li>• Information</li> </ul>
Order Item Reference	A reference to an item on the Order to which this Notification applies	String	4	Conditional	This value MUST be provided when the message applies to a particular Order Item; otherwise it is prohibited.

Order Attribute	Description	Data Type	Max Length	Order Status	Requirements
Correction Required	Indicates whether the Buyer must submit an updated Order to resolve the Error/Jeopardy condition.	Boolean		Required	Valid Values = True or False

Table 9 – Notify Order Status and Complete Order Ordering Attributes (Use Cases 7, 8)

## 9. State Diagram

State diagrams are used to give an abstract description of the behavior of a system. This behavior is analyzed and represented in series of events, that could occur in one or more possible states. The below state diagram is excerpted from TMF622 (Product Ordering API REST Specification) and should be used to convey order status during the life of an Order.

Acknowledged	The <i>Acknowledged</i> state is where an order has been received and has passed message and basic business validations.
In Progress	The <i>In Progress</i> state is where an order has passed the Order Feasibility check successfully and service delivery has started.
Cancelled	The <i>Cancelled</i> state is where an In-Flight Order has been successfully cancelled.
Completed	The <i>Completed</i> state is where an order has complete provision and the service is now active.
Rejected	The <i>Rejected</i> state is where: <ul style="list-style-type: none"> <li>- An order failed the Order Feasibility check</li> <li>- Invalid information is provided through the order request</li> <li>- The order request fails to meet business rules for ordering.</li> </ul>
Pending	The <i>Pending</i> state is used when an order is currently in a waiting stage for an action/activity to be completed before the order can progress further, pending order amend or cancel assessment. In situations where Access Seeker action is required, an "information required" notification will be issued on transition into this state.  A pending stage can lead into auto cancellation of an order, if no action is taken within the defined timeframes to be described under the Agreement.
Held	The <i>Held</i> state is used when an order cannot be progressed due to an issue. SP has temporarily delayed completing an order to resolve an infrastructure shortfall to facilitate supply of order. Upon resolution of the issue, the order will continue to progress.
Failed	All Order items have failed which results in the entire Order has <i>Failed</i> .
Partial	Some Order items have failed and some have succeeded so the entire Order is in a <i>Partial</i> state. This provides support for partial Failure of an Order

Table 10 - Ethernet Ordering State Machine Definitions (TMF REST API Specification R16.5.1 (Product Order))

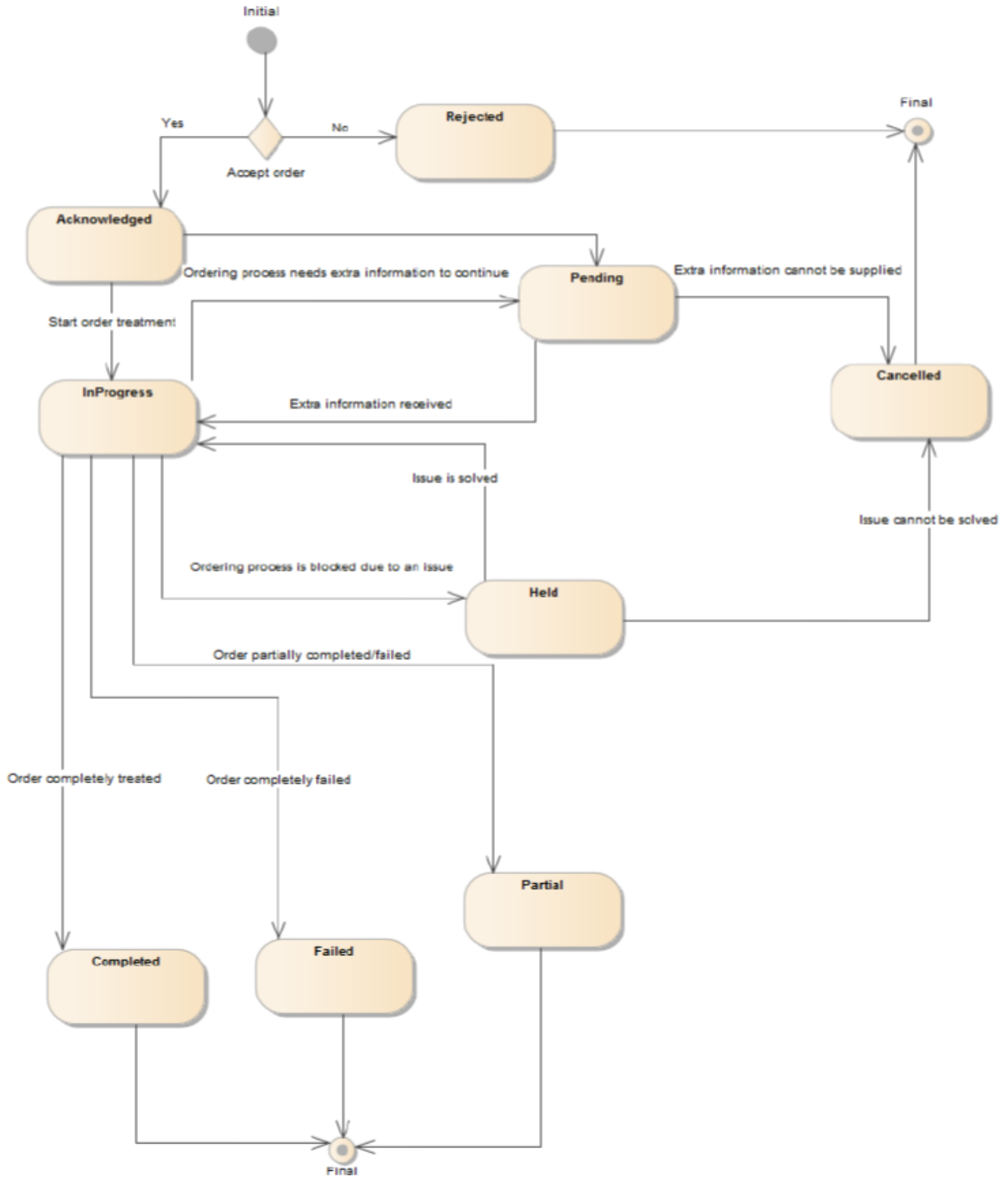


Figure 5 - Ethernet Ordering State Machine Diagram Based on TMF REST API Specification R16.5.1 (Product Order)

## 10. References

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