

# INTERNATIONAL STANDARD

# ISO 8571-4

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**AMENDMENT 1**  
1992-12-15

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## Information processing systems – Open Systems Interconnection – File Transfer, Access and Management –

iTeh STANDARD PREVIEW

Part 4 :  
File Protocol Specification

AMENDMENT 1 : Filestore Management

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*Technologies de l'information – Interconnexion de systèmes ouverts (OSI) –  
Transfert, accès et gestion de fichiers –*

*Partie 4 : Spécification du protocole de fichiers*

*AMENDEMENT 1 : Gestion du système de fichiers*

INTERNATIONAL

ISO



Reference number  
ISO 8571-4:1988/Amd.1:1992 (E)

## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 1 to International Standard ISO 8571-4:1988 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO 8571-4 consists of the following parts, under the general title *Information processing systems – Open Systems Interconnection – File Transfer, Access and Management*

- Part 1 : General introduction
- Part 2 : Virtual Filestore Definition
- Part 3 : File Service Definition
- Part 4 : File Protocol Specification
- Part 5 : Protocol Implementation Conformance Statement Proforma

# Information processing systems – Open Systems Interconnection – File Transfer, Access and Management –

## Part 4 : File Protocol Specification

### AMENDMENT 1 : Filestore Management

NOTE – This amendment has additional subclauses and tables to ISO 8571 which are indicated by the use of lower case Roman letters beginning with "a" and imply ordering alphabetically, following the clause with the same numerical value in ISO 8571. These and all subsequent subclauses, tables, and cross references will be renumbered in subsequent editions.

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#### 0 Introduction

(amend 4th paragraph, page 1)

(amend 3rd paragraph, page 1)

ISO 8571 defines services for file transfer, access and management. It also specifies a protocol available within the application layer of the Reference Model. The service defined is of the category Application Service Element (ASE). It is concerned with identifiable bodies of information which can be treated as files, stored and managed within open systems, or passed between application processes.

ISO 8571 defines a basic file service. It provides sufficient facilities to support file transfer, file access, and management of files stored on open systems. ISO 8571 does not specify the interfaces to a file transfer, access or management facility within the local system.

*(append after subclause 8.2, page 8)*

NOTE – This amendment adds the following file initiating entity actions. The detailed actions are listed below and detailed in the state table (Annex A).

#### **8.2a Group Selection (Group Manipulation)**

The initiating entity actions for Group Selection are described in Annex a.

#### **8.2b Change Current Name Prefix (Limited Filestore Management)**

The initiating entity actions for Change Current Name Prefix are described in Annex a.

#### **8.2c List File Directory (Limited Filestore Management)**

The initiating entity actions for List File Directory are described in Annex a.

#### **8.2d Group Deletion (Group Manipulation)**

The initiating entity actions for Group Deletion are described in Annex a.

#### **8.2e Group Move (Group Manipulation)**

The initiating entity actions for Group Move are described in Annex a.

#### **8.2f Group Copy (Group Manipulation)**

The initiating entity actions for Group Copy are described in Annex a.

#### **8.2g Group List (Group Manipulation)**

The initiating entity actions for Group List are described in Annex a.

#### **8.2h Group Change Attributes (Enhanced Filestore Management)**

The initiating entity actions for Group Change Attributes are described in Annex a.

#### **8.2i Select-Another Object (group Manipulation)**

The initiating entity actions for Select-Another Object are described in Annex a.

#### **8.2j Move Object (Object Manipulation)**

The initiating entity actions for Move Object are described in Annex a.

#### **8.2k Copy Object (Object Manipulation)**

The initiating entity actions for Copy Object are described in Annex a.

#### **8.2l File-Directory Creation (Enhanced Filestore Management)**

The initiating entity actions for File-Directory Creation are described in Annex a.

#### **8.2m Reference Creation (Enhanced Filestore Management)**

The initiating entity actions for Reference Creation are described in Annex a.

#### **8.2n Reference Deletion (Enhanced Filestore Management)**

The initiating entity actions for Reference Deletion are described in Annex a.

#### **8.2o Read Reference Attributes (Enhanced Filestore Management)**

The initiating entity actions for Read Reference Attributes are described in Annex a.

#### **8.2p Change Reference Attributes (Enhanced Filestore Management)**

The initiating entity actions for Change Reference Attributes are described in Annex a.

*(append after subclause 9.2, page 15)*

NOTE – This amendment adds the following file responding entity actions. The detailed actions are listed below and detailed in the state table (Annex A).

#### **9.2a Group Selection (Group Manipulation)**

The responding entity actions for Group Selection are described in Annex a.

#### **9.2b Change Current Name Prefix (Limited Filestore Management)**

The responding entity actions for Change Current Name Prefix are described in Annex a.

#### **9.2c List File Directory (Limited Filestore Management)**

The responding entity actions for List File Directory are described in Annex a.

#### **9.2d Group Deletion (Group Manipulation)**

The responding entity actions for Group Deletion are described in Annex a.

#### **9.2e Group Move (Group Manipulation)**

The responding entity actions for Group Move are described in Annex a.

#### **9.2f Group Copy (Group Manipulation)**

The responding entity actions for Group Copy are described in Annex a.

#### **9.2g Group List (Group Manipulation)**

The responding entity actions for Group List are described in Annex a.

#### **9.2h Group Change Attributes (Enhanced Filestore Management)**

The responding entity actions for Group Change Attributes are described in Annex a.

**9.2i Select-Another Object (Group Manipulation)**

The responding entity actions for Select-Another Object are described in Annex a.

**9.2j Move Object (Object Manipulation)**

The responding entity actions for Move Object are described in Annex a.

**9.2k Copy Object (Object Manipulation)**

The responding entity actions for Copy Object are described in Annex a.

**9.2l File-Directory Creation (Enhanced Filestore Management)**

The responding entity actions for File-Directory Creation are described in Annex a.

**9.2m Reference Creation (Enhanced Filestore Management)**

The responding entity actions for Reference Creation are described in Annex a.

**9.2n Reference Deletion (Enhanced Filestore Management)**

The responding entity actions for Reference Deletion are described in Annex a.

**9.2o Read Reference Attributes (Enhanced Filestore Management)**

The responding entity actions for Read Reference Attributes are described in Annex a.

**9.2p Change Reference Attributes (Enhanced Filestore Management)**

The responding entity actions for Change Reference Attributes are described in Annex a.

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## Section five: Abstract Syntax

### 20.3 ASN.1 Module Definition

(amend Figure 7, page 33)

```

1
2
3 ISO8571-FTAM DEFINITIONS ::=
4 BEGIN
5   PDU ::= CHOICE { FTAM-Regime-PDU, File-PDU, Bulk-Data-PDU, FSM-PDU }
6
7   FTAM-Regime-PDU ::= CHOICE {
8     f-initialize-request      [0] IMPLICIT F-INITIALIZE-request,
9     f-initialize-response     [1] IMPLICIT F-INITIALIZE-response,
10    f-terminate-request       [2] IMPLICIT F-TERMINATE-request,
11    f-terminate-response      [3] IMPLICIT F-TERMINATE-response,
12    f-u-abort-request         [4] IMPLICIT F-U-ABORT-request,
13    f-p-abort-request         [5] IMPLICIT F-P-ABORT-request }
14
15  F-INITIALIZE-request ::= SEQUENCE {
16    protocol-version          Protocol-Version DEFAULT { version-1 },
17    implementation-information Implementation-Information OPTIONAL,
18    presentation-context-management [2] IMPLICIT BOOLEAN DEFAULT FALSE,
19    service-class             Service-Class DEFAULT { transfer-class },
20    -- Only the valid combinations as specified in ISO 8571-3 are allowed.
21    functional-units          Functional-Units,
22    attribute-groups          Attribute-Groups DEFAULT {},
23    shared-ASE-information    Shared-ASE-Information OPTIONAL,
24    ftam-quality-of-service   FTAM-Quality-of-Service,
25    contents-type-list        Contents-Type-List OPTIONAL,
26    initiator-identity        User-Identity OPTIONAL,
27    account                   Account OPTIONAL,
28    filestore-password        Password OPTIONAL,
29    checkpoint-window         [8] IMPLICIT INTEGER DEFAULT 1 }
30    -- If the recovery or restart data transfer functional units are
31    -- not available, the checkpoint-window parameter shall not be sent.
32
33  F-INITIALIZE-response ::= SEQUENCE {
34    state-result              State-Result DEFAULT success,
35    action-result             Action-Result DEFAULT success,
36    protocol-version          Protocol-Version DEFAULT { version-1 },
37    implementation-information Implementation-Information OPTIONAL,
38    presentation-context-management [2] IMPLICIT BOOLEAN DEFAULT FALSE,
39    service-class             Service-Class DEFAULT { transfer-class },
40    -- Only the valid combinations as specified in ISO 8571-3 are allowed.
41    functional-units          Functional-Units,
42    attribute-groups          Attribute-Groups DEFAULT {},
43    shared-ASE-information    Shared-ASE-Information OPTIONAL,
44    ftam-quality-of-service   FTAM-Quality-of-Service,
45    contents-type-list        Contents-Type-List OPTIONAL,

```

46 diagnostic Diagnostic OPTIONAL,  
 47 checkpoint-window [8] IMPLICIT INTEGER DEFAULT 1 }  
 48 -- If the recovery or restart data transfer functional units are  
 49 -- not available, the checkpoint-window parameter shall not be sent.  
 50  
 51 Protocol-Version ::= [0] IMPLICIT BIT STRING  
 52 { version-1 (0),  
 53 version-2 (1) }  
 54  
 55 Implementation-Information ::= [1] IMPLICIT GraphicString  
 56 -- This parameter is provided solely for the convenience of implementors  
 57 -- needing to distinguish between implementations of a specific version number  
 58 -- of different equipment, it shall not be the subject of conformance test.  
 59  
 60 Service-Class ::= [3] IMPLICIT BIT STRING  
 61 { unconstrained-class (0),  
 62 management-class (1),  
 63 transfer-class (2),  
 64 transfer-and-management-class (3),  
 65 access-class (4) }  
 66  
 67 Functional-Units ::= [4] IMPLICIT BIT STRING  
 68 { read (2),  
 69 write (3),  
 70 file-access (4),  
 71 limited-file-management (5),  
 72 enhanced-file-management (6),  
 73 grouping (7),  
 74 fadu-locking (8),  
 75 recovery (9),  
 76 restart-data-transfer (10),  
 77 limited-filestore-management (11),  
 78 enhanced-filestore-management (12),  
 79 object-manipulation (13),  
 80 group-manipulation (14) }  
 81 -- Values 2 to 14 are chosen to align with numbering scheme used in ISO 8571-3.  
 82  
 83 Attribute-Groups ::= [5] IMPLICIT BIT STRING  
 84 { storage (0),  
 85 security (1),  
 86 private (2),  
 87 extension (3) }  
 88 -- The extension bit is defined if and only if the limited-filestore-management  
 89 -- or the group-manipulation functional units are available.  
 90  
 91 FTAM-Quality-of-Service ::= [6] IMPLICIT INTEGER  
 92 { no-recovery (0),  
 93 class-1-recovery (1),  
 94 class-2-recovery (2),  
 95 class-3-recovery (3) }  
 96  
 97 Contents-Type-List ::= [7] IMPLICIT SEQUENCE OF CHOICE  
 98 { document-type-name Document-Type-Name,  
 99 abstract-syntax-name Abstract-Syntax-Name }

```

100
101 F-TERMINATE-request ::= SEQUENCE {
102     shared-ASE-information          Shared-ASE-Information OPTIONAL }
103
104 F-TERMINATE-response ::= SEQUENCE {
105     shared-ASE-information          Shared-ASE-Information OPTIONAL,
106     charging                        Charging OPTIONAL }
107
108 F-U-ABORT-request ::= SEQUENCE {
109     action-result                    Action-Result DEFAULT success,
110     diagnostic                       Diagnostic OPTIONAL }
111
112 F-P-ABORT-request ::= SEQUENCE {
113     action-result                    Action-Result DEFAULT success,
114     diagnostic                       Diagnostic OPTIONAL }
115
116 File-PDU ::= CHOICE {
117     f-select-request                 [ 6] IMPLICIT F-SELECT-request,
118     f-select-response                [ 7] IMPLICIT F-SELECT-response,
119     f-deselect-request               [ 8] IMPLICIT F-DESELECT-request,
120     f-deselect-response              [ 9] IMPLICIT F-DESELECT-response,
121     f-create-request                 [10] IMPLICIT F-CREATE-request,
122     f-create-response                [11] IMPLICIT F-CREATE-response,
123     f-delete-request                 [12] IMPLICIT F-DELETE-request,
124     f-delete-response                [13] IMPLICIT F-DELETE-response,
125     f-read-attrib-request             [14] IMPLICIT F-READ-ATTRIB-request,
126     f-read-attrib-response           [15] IMPLICIT F-READ-ATTRIB-response,
127     f-change-attrib-request           [16] IMPLICIT F-CHANGE-ATTRIB-request,
128     f-change-attrib-response         [17] IMPLICIT F-CHANGE-ATTRIB-response,
129     f-open-request                   [18] IMPLICIT F-OPEN-request,
130     f-open-response                  [19] IMPLICIT F-OPEN-response,
131     f-close-request                  [20] IMPLICIT F-CLOSE-request,
132     f-close-response                 [21] IMPLICIT F-CLOSE-response,
133     f-begin-group-request            [22] IMPLICIT F-BEGIN-GROUP-request,
134     f-begin-group-response           [23] IMPLICIT F-BEGIN-GROUP-response,
135     f-end-group-request               [24] IMPLICIT F-END-GROUP-request,
136     f-end-group-response             [25] IMPLICIT F-END-GROUP-response,
137     f-recover-request                [26] IMPLICIT F-RECOVER-request,
138     f-recover-response               [27] IMPLICIT F-RECOVER-response,
139     f-locate-request                 [28] IMPLICIT F-LOCATE-request,
140     f-locate-response                [29] IMPLICIT F-LOCATE-response,
141     f-erase-request                  [30] IMPLICIT F-ERASE-request,
142     f-erase-response                 [31] IMPLICIT F-ERASE-response }
143
144 F-SELECT-request ::= SEQUENCE {
145     attributes                        Select-Attributes,
146     requested-access                  Access-Request,
147     access-passwords                  Access-Passwords OPTIONAL,
148     path-access-passwords             Path-Access-Passwords OPTIONAL,
149     -- This parameter can only be sent when the
150     -- limited-filestore-management or the object-manipulation or
151     -- the group-manipulation functional units are available.
152     concurrency-control                Concurrency-Control OPTIONAL,
153     shared-ASE-information             Shared-ASE-Information OPTIONAL,

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154	account	Account OPTIONAL }
155		
156	F-SELECT-response ::= SEQUENCE {	
157	state-result	State-Result DEFAULT success,
158	action-result	Action-Result DEFAULT success,
159	attributes	Select-Attributes,
160	referent-indicator	Referent-Indicator OPTIONAL,
161	-- This parameter can only be sent when the	
162	-- limited-filestore-management functional unit is available.	
163	shared-ASE-information	Shared-ASE-Information OPTIONAL,
164	diagnostic	Diagnostic OPTIONAL }
165		
166	F-DESELECT-request ::= SEQUENCE {	
167	shared-ASE-information	Shared-ASE-Information OPTIONAL }
168		
169	F-DESELECT-response ::= SEQUENCE {	
170	action-result	Action-Result DEFAULT success,
171	charging	Charging OPTIONAL,
172	-- Present if and only if the account field was present on	
173	-- the PDU which established the selection regime.	
174	shared-ASE-information	Shared-ASE-Information OPTIONAL,
175	diagnostic	Diagnostic OPTIONAL }
176		
177	F-CREATE-request ::= SEQUENCE {	
178	override	[0] IMPLICIT Override DEFAULT create-failure.
179	initial-attributes	Create-Attributes,
180	create-password	Password OPTIONAL,
181	requested-access	Access-Request,
182	access-passwords	Access-Passwords OPTIONAL,
183	path-access-passwords	Path-Access-Passwords OPTIONAL,
184	-- This parameter can only be sent when the	
185	-- limited-filestore-management or the object-manipulation or	
186	-- the group-manipulation functional units are available.	
187	concurrency-control	Concurrency-Control OPTIONAL,
188	shared-ASE-information	Shared-ASE-Information OPTIONAL,
189	account	Account OPTIONAL }
190		
191	F-CREATE-response ::= SEQUENCE {	
192	state-result	State-Result DEFAULT success,
193	action-result	Action-Result DEFAULT success,
194	initial-attributes	Create-Attributes,
195	shared-ASE-information	Shared-ASE-Information OPTIONAL,
196	diagnostic	Diagnostic OPTIONAL }
197		
198	F-DELETE-request ::= SEQUENCE {	
199	shared-ASE-information	Shared-ASE-Information OPTIONAL }
200		
201	F-DELETE-response ::= SEQUENCE {	
202	action-result	Action-Result DEFAULT success,
203	shared-ASE-information	Shared-ASE-Information OPTIONAL,
204	charging	Charging OPTIONAL,
205	diagnostic	Diagnostic OPTIONAL }
206		
207	F-READ-ATTRIB-request ::= SEQUENCE {	

208 attribute-names [0] IMPLICIT Attribute-Names,  
 209 attribute-extension-names [1] IMPLICIT Attribute-Extension-Names  
 210 OPTIONAL }  
 211 -- This parameter can only be sent when the  
 212 -- limited-filestore-management functional unit is available.  
 213  
 214 F-READ-ATTRIB-response ::= SEQUENCE {  
 215 action-result Action-Result DEFAULT success,  
 216 attributes Read-Attributes OPTIONAL,  
 217 -- Password values within the access control can not be read by means  
 218 -- of the read attribute action. Whether other parts of the access  
 219 -- control object attribute can be read by means of the read  
 220 -- attribute action is decided locally by the responding entity, and  
 221 -- it shall not be the subject of conformance test.  
 222 diagnostic Diagnostic OPTIONAL }  
 223  
 224 F-CHANGE-ATTRIB-request ::= SEQUENCE {  
 225 attributes Change-Attributes }  
 226  
 227 F-CHANGE-ATTRIB-response ::= SEQUENCE {  
 228 action-result Action-Result DEFAULT success,  
 229 attributes Change-Attributes OPTIONAL,  
 230 -- Password values within access control attribute are never returned.  
 231 -- Other attributes are returned as an implementation choice.  
 232 diagnostic Diagnostic OPTIONAL }  
 233  
 234 F-OPEN-request ::= SEQUENCE {  
 235 processing-mode [0] IMPLICIT BIT STRING  
 236 { f-read (0),  
 237 f-insert (1),  
 238 f-replace (2),  
 239 f-extend (3),  
 240 f-erase (4) } DEFAULT { f-read },  
 241 contents-type [1] CHOICE {  
 242 unknown [0] IMPLICIT NULL,  
 243 proposed [1] Contents-Type-Attribute },  
 244 concurrency-control Concurrency-Control OPTIONAL,  
 245 shared-ASE-information Shared-ASE-Information OPTIONAL,  
 246 enable-fadu-locking [2] IMPLICIT BOOLEAN DEFAULT FALSE,  
 247 -- If the fadu-locking functional unit is not available, the  
 248 -- enable-fadu-locking parameter shall not be sent.  
 249 activity-identifier Activity-Identifier OPTIONAL,  
 250 -- Only used in the recovery functional unit.  
 251 recovery-mode [3] IMPLICIT INTEGER  
 252 { none (0),  
 253 at-start-of-file (1),  
 254 at-any-active-checkpoint (2) }  
 255 DEFAULT none,  
 256 -- If the recovery or restart data transfer functional units are not  
 257 -- available, the recovery-mode parameter shall not be sent.  
 258 remove-contexts [4] IMPLICIT SET OF Abstract-Syntax-Name OPTIONAL,  
 259 define-contexts [5] IMPLICIT SET OF Abstract-Syntax-Name OPTIONAL }  
 260  
 261 F-OPEN-response ::= SEQUENCE {

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262	state-result	State-Result DEFAULT success,
263	action-result	Action-Result DEFAULT success,
264	contents-type	[1] Contents-Type-Attribute,
265	concurrency-control	Concurrency-Control OPTIONAL,
266	shared-ASE-information	Shared-ASE-Information OPTIONAL,
267	diagnostic	Diagnostic OPTIONAL,
268	recovery-mode	[3] IMPLICIT INTEGER
269		{ none (0),
270		at-start-of-file (1),
271		at-any-active-checkpoint (2) }
272		DEFAULT none,
273	-- If the recovery or restart data transfer functional units are not	
274	-- available, the recovery-mode parameter shall not be sent.	
275	presentation-action	[6] IMPLICIT BOOLEAN DEFAULT FALSE }
276	-- This flag is set if the responder is going to follow this response	
277	-- by a P-ALTER-CONTEXT exchange.	
278		
279	F-CLOSE-request ::= SEQUENCE {	
280	action-result	Action-Result DEFAULT success,
281	shared-ASE-information	Shared-ASE-Information OPTIONAL,
282	diagnostic	Diagnostic OPTIONAL }
283		
284	F-CLOSE-response ::= SEQUENCE {	
285	action-result	Action-Result DEFAULT success,
286	shared-ASE-information	Shared-ASE-Information OPTIONAL,
287	diagnostic	Diagnostic OPTIONAL }
288		
289	F-BEGIN-GROUP-request ::= SEQUENCE {	
290	threshold	[0] IMPLICIT INTEGER }
291		
292	F-BEGIN-GROUP-response ::= SEQUENCE { }	
293	-- No elements defined, shall be empty.	
294		
295	F-END-GROUP-request ::= SEQUENCE { }	
296	-- No elements defined, shall be empty.	
297		
298	F-END-GROUP-response ::= SEQUENCE { }	
299	-- No elements defined, shall be empty.	
300		
301	F-RECOVER-request ::= SEQUENCE {	
302	activity-identifier	Activity-Identifier,
303	bulk-transfer-number	[0] IMPLICIT INTEGER,
304	requested-access	Access-Request,
305	access-passwords	Access-Passwords OPTIONAL,
306	path-access-passwords	Path-Access-Passwords OPTIONAL,
307	-- This parameter can only be sent when the	
308	-- limited-filestore-management or the object-manipulation or	
309	-- the group-manipulation functional units are available.	
310	recovery-point	[2] IMPLICIT INTEGER DEFAULT 0,
311	-- Zero indicates beginning of file	
312	-- Point after last checkpoint indicates end of file	
313	-- The recovery-point parameter shall only be sent by the entity that	
314	-- was receiving data at the time of failure.	
315	remove-contexts	[3] IMPLICIT SET OF Abstract-Syntax-Name OPTIONAL,

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316     define-contexts                                [4] IMPLICIT SET OF Abstract-Syntax-Name OPTIONAL }
317
318 F-RECOVER-response ::= SEQUENCE {
319     state-result                                     State-Result DEFAULT success,
320     action-result                                     Action-Result DEFAULT success,
321     contents-type                                     [1] Contents-Type-Attribute,
322     recovery-point                                   [2] IMPLICIT INTEGER DEFAULT 0,
323     -- Zero indicates beginning of file.
324     -- Point after last checkpoint indicates end of file.
325     -- The recovery-point parameter shall only be sent by the entity that
326     -- was receiving data at the time of failure.
327     diagnostic                                       Diagnostic OPTIONAL,
328     presentation-action                               [6] IMPLICIT BOOLEAN DEFAULT FALSE }
329     -- This flag is set if the responder is going to follow this response
330     -- by a P-ALTER-CONTEXT exchange.
331
332 F-LOCATE-request ::= SEQUENCE {
333     file-access-data-unit-identity                   FADU-Identity,
334     fadu-lock                                        FADU-Lock OPTIONAL }
335
336 F-LOCATE-response ::= SEQUENCE {
337     action-result                                     Action-Result DEFAULT success,
338     file-access-data-unit-identity                   FADU-Identity OPTIONAL,
339     diagnostic                                       Diagnostic OPTIONAL }
340
341 F-ERASE-request ::= SEQUENCE {
342     file-access-data-unit-identity                   FADU-Identity }
343
344 F-ERASE-response ::= SEQUENCE {
345     action-result                                     Action-Result DEFAULT success,
346     diagnostic                                       Diagnostic OPTIONAL }
347
348 Bulk-Data-PDU ::= CHOICE {
349     f-read-request                                   [32] IMPLICIT F-READ-request,
350     f-write-request                                  [33] IMPLICIT F-WRITE-request,
351     -- There is no F-DATA FPDU, the contents of a file
352     -- are transferred in a different presentation context
353     -- and there is therefore no need to define the types
354     -- of file contents in the FTAM PCI abstract syntax.
355     -- File contents data are carried in values of the
356     -- data type Data-Element as defined in ISO 8571-2.
357     f-data-end-request                               [34] IMPLICIT F-DATA-END-request,
358     f-transfer-end-request                           [35] IMPLICIT F-TRANSFER-END-request,
359     f-transfer-end-response                           [36] IMPLICIT F-TRANSFER-END-response,
360     f-cancel-request                                 [37] IMPLICIT F-CANCEL-request,
361     f-cancel-response                                [38] IMPLICIT F-CANCEL-response,
362     -- There is no F-CHECK PDU.
363     f-restart-request                                [39] IMPLICIT F-RESTART-request,
364     f-restart-response                               [40] IMPLICIT F-RESTART-response }
365
366 F-READ-request ::= SEQUENCE {
367     file-access-data-unit-identity                   FADU-Identity,
368     access-context                                   Access-Context,
369     fadu-lock                                        FADU-Lock OPTIONAL }

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370
371 F-WRITE-request ::= SEQUENCE {
372     file-access-data-unit-operation           [0] IMPLICIT INTEGER
373     { insert (0),
374       replace (1),
375       extend (2) },
376     file-access-data-unit-identity           FADU-Identity,
377     fadu-lock                               FADU-Lock OPTIONAL }
378
379 F-DATA-END-request ::= SEQUENCE {
380     action-result                           Action-Result DEFAULT success,
381     diagnostic                              Diagnostic OPTIONAL }
382
383 F-TRANSFER-END-request ::= SEQUENCE {
384     shared-ASE-information                 Shared-ASE-Information OPTIONAL }
385
386 F-TRANSFER-END-response ::= SEQUENCE {
387     action-result                           Action-Result DEFAULT success,
388     shared-ASE-information                 Shared-ASE-Information OPTIONAL,
389     diagnostic                              Diagnostic OPTIONAL }
390
391 F-CANCEL-request ::= SEQUENCE {
392     action-result                           Action-Result DEFAULT success,
393     shared-ASE-information                 Shared-ASE-Information OPTIONAL,
394     diagnostic                              Diagnostic OPTIONAL }
395
396 F-CANCEL-response ::= SEQUENCE {
397     action-result                           Action-Result DEFAULT success,
398     shared-ASE-information                 Shared-ASE-Information OPTIONAL,
399     diagnostic                              Diagnostic OPTIONAL }
400
401 F-RESTART-request ::= SEQUENCE {
402     checkpoint-identifier                   [0] IMPLICIT INTEGER }
403
404 F-RESTART-response ::= SEQUENCE {
405     checkpoint-identifier                   [0] IMPLICIT INTEGER }
406
407 Abstract-Syntax-Name ::= [APPLICATION 0] IMPLICIT OBJECT IDENTIFIER
408
409 Access-Context ::= [APPLICATION 1] IMPLICIT SEQUENCE {
410     access-context                         [0] IMPLICIT INTEGER
411     { hierarchical-all-data-units (0),           -- HA
412       hierarchical-no-data-units (1),           -- HN
413       flat-all-data-units (2),                 -- FA
414       flat-one-level-data-units (3),           -- FL
415       flat-single-data-unit (4),               -- FS
416       unstructured-all-data-units (5),        -- UA
417       unstructured-single-data-unit (6) },      -- US
418     level-number [1] IMPLICIT INTEGER OPTIONAL }
419     -- Present if and only if flat-one-level-data-units
420     -- (access context FL) is selected.
421     -- As defined in ISO 8571-2.
422
423 Access-Passwords ::= [APPLICATION 2] IMPLICIT SEQUENCE {

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424 read-password [0] IMPLICIT Password,  
 425 insert-password [1] IMPLICIT Password,  
 426 replace-password [2] IMPLICIT Password,  
 427 extend-password [3] IMPLICIT Password,  
 428 erase-password [4] IMPLICIT Password,  
 429 read-attribute-password [5] IMPLICIT Password,  
 430 change-attribute-password [6] IMPLICIT Password,  
 431 delete-password [7] IMPLICIT Password,  
 432 pass-passwords [8] IMPLICIT Pass-Passwords OPTIONAL,  
 433 link-password [9] IMPLICIT Password OPTIONAL }  
 434 -- The pass-passwords and the link-password must be included in the  
 435 -- access-passwords if and only if the limited-filestore-management  
 436 -- or the object-manipulation or the group-manipulation functional  
 437 -- units are available.  
 438  
 439 Access-Request ::= [APPLICATION 3] IMPLICIT BIT STRING  
 440 { read (0),  
 441 insert (1),  
 442 replace (2),  
 443 extend (3),  
 444 erase (4),  
 445 read-attribute (5),  
 446 change-attribute (6),  
 447 delete-object (7) }  
 448  
 449 Account ::= [APPLICATION 4] IMPLICIT GraphicString  
 450  
 451 Action-Result ::= [APPLICATION 5] IMPLICIT INTEGER  
 452 { success 85(0),  
 453 transient-error (1),  
 454 permanent-error 57(2) }  
 455  
 456 Activity-Identifier ::= [APPLICATION 6] IMPLICIT INTEGER  
 457  
 458 Application-Entity-Title ::= [APPLICATION 7] ACSE-1.AE-title  
 459 -- As defined in ISO 8650.  
 460  
 461 Change-Attributes ::= [APPLICATION 8] IMPLICIT SEQUENCE {  
 462 -- Kernel Group Pathname-Attribute OPTIONAL,  
 463 pathname  
 464 -- Storage group [ 3] Account-Attribute OPTIONAL,  
 465 storage-account [12] Object-Availability-Attribute OPTIONAL,  
 466 object-availability [14] Object-Size-Attribute OPTIONAL,  
 467 future-object-size  
 468 -- Security group [15] Access-Control-Change-Attribute OPTIONAL,  
 469 access-control [21] Access-Control-Change-Attribute OPTIONAL,  
 470 path-access-control  
 471 -- This parameter can only be sent when the  
 472 -- enhanced-filestore-management functional unit is available.  
 473 legal-qualification [16] Legal-Qualification-Attribute OPTIONAL,  
 474 -- Private group [17] Private-Use-Attribute OPTIONAL,  
 475 private-use  
 476 -- Attribute Extensions group [22] IMPLICIT Attribute-Extensions OPTIONAL }  
 477 attribute-extensions

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 (standards.iteh.ai)

<https://standards.iteh.ai/standard/ISO/ISO-8571-4:1988/Amd-1:1992>  
 transient-error (1),  
 permanent-error 57(2) } 988-amd-1-1992

478 -- This parameter can only be sent when the  
479 -- enhanced-filestore-management functional unit is available.  
480 -- At least one attribute shall be present in the Change-Attributes  
481 -- parameter on the request PDU.  
482  
483 Charging ::= [APPLICATION 9] IMPLICIT SEQUENCE OF SEQUENCE {  
484 resource-identifier [0] IMPLICIT GraphicString,  
485 charging-unit [1] IMPLICIT GraphicString,  
486 charging-value [2] IMPLICIT INTEGER }  
487  
488 Concurrency-Control ::= [APPLICATION 10] IMPLICIT SEQUENCE  
489 { read [0] IMPLICIT Lock,  
490 insert [1] IMPLICIT Lock,  
491 replace [2] IMPLICIT Lock,  
492 extend [3] IMPLICIT Lock,  
493 erase [4] IMPLICIT Lock,  
494 read-attribute [5] IMPLICIT Lock,  
495 change-attribute [6] IMPLICIT Lock,  
496 delete-object [7] IMPLICIT Lock }  
497  
498 Lock ::= INTEGER  
499 { not-required (0),  
500 shared (1),  
501 exclusive (2),  
502 no-access (3) }  
503  
504 Constraint-Set-Name ::= [APPLICATION 11] IMPLICIT OBJECT IDENTIFIER  
505  
506 Create-Attributes ::= [APPLICATION 12] IMPLICIT SEQUENCE {  
507 -- Kernel Group <https://standards.iteh.ai/catalog/standards/sist/c4929aa8-fdfl-4551-a61c-1695f26020d8/iso-8571-4:1988/Amendment-1-1992>  
508 pathname Pathname-Attribute,  
509 object-type [18] IMPLICIT Object-Type-Attribute DEFAULT file,  
510 -- This parameter can be sent if and only if the  
511 -- limited-filestore-management functional unit is available.  
512 permitted-actions [ 1] IMPLICIT Permitted-Actions-Attribute,  
513 contents-type [ 2] Contents-Type-Attribute,  
514 -- Storage group  
515 storage-account [ 3] Account-Attribute OPTIONAL,  
516 object-availability [12] Object-Availability-Attribute OPTIONAL,  
517 future-object-size [14] Object-Size-Attribute OPTIONAL,  
518 -- Security group  
519 access-control [15] Access-Control-Attribute OPTIONAL,  
520 path-access-control [21] Access-Control-Attribute OPTIONAL,  
521 -- This parameter can be sent if and only if the  
522 -- enhanced-filestore-management functional unit is available.  
523 legal-qualification [16] Legal-Qualification-Attribute OPTIONAL,  
524 -- Private group  
525 private-use [17] Private-Use-Attribute OPTIONAL,  
526 -- Attribute Extensions group  
527 attribute-extensions [22] IMPLICIT Attribute-Extensions OPTIONAL }  
528 -- This parameter can only be sent when the  
529 -- limited-filestore-management functional unit is available.  
530  
531 Diagnostic ::= [APPLICATION 13] IMPLICIT SEQUENCE OF SEQUENCE {