Previews for the next draft of P802.1ASdn
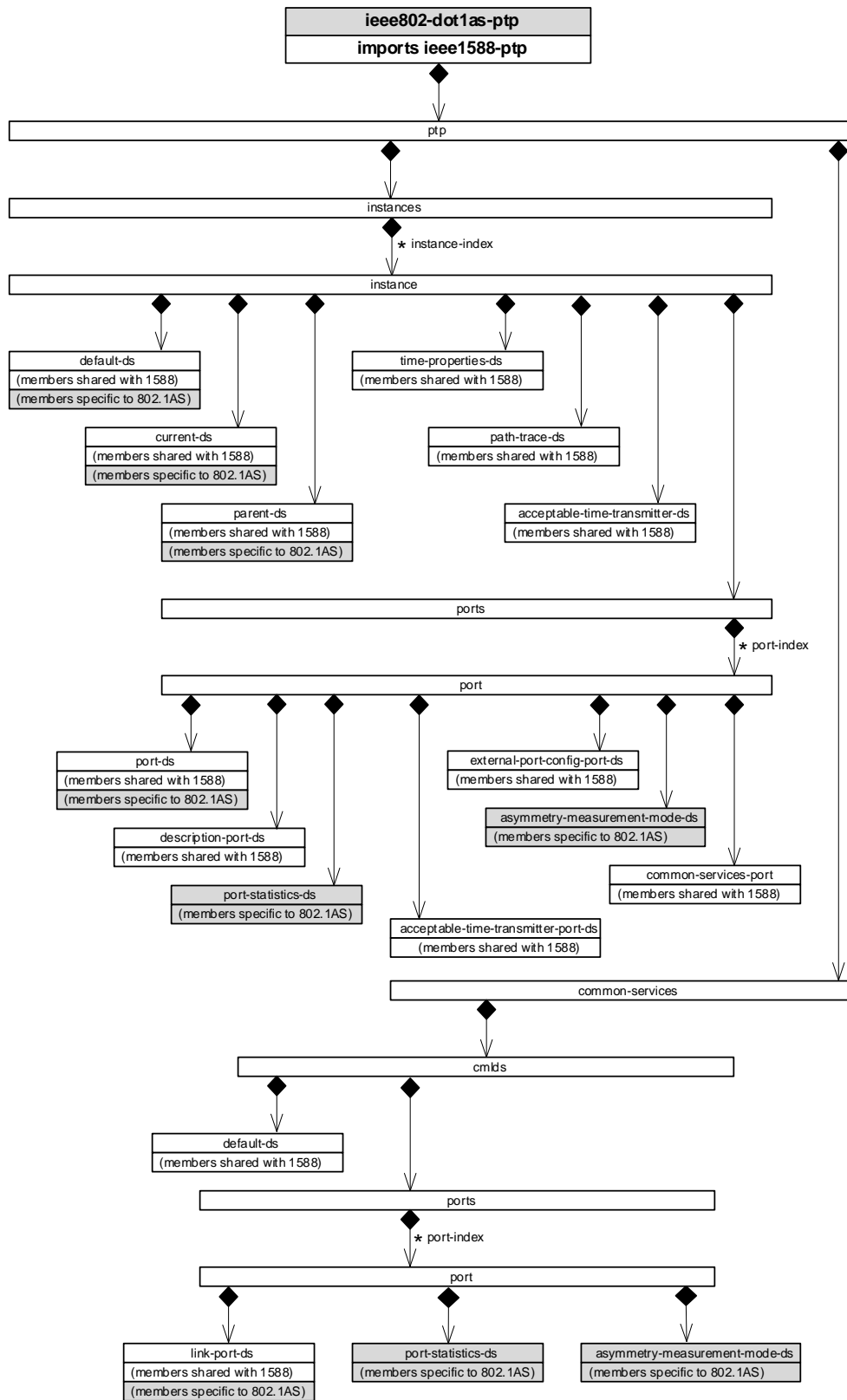
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Affiliation: Self
Date: April 15, 2024

About this Document
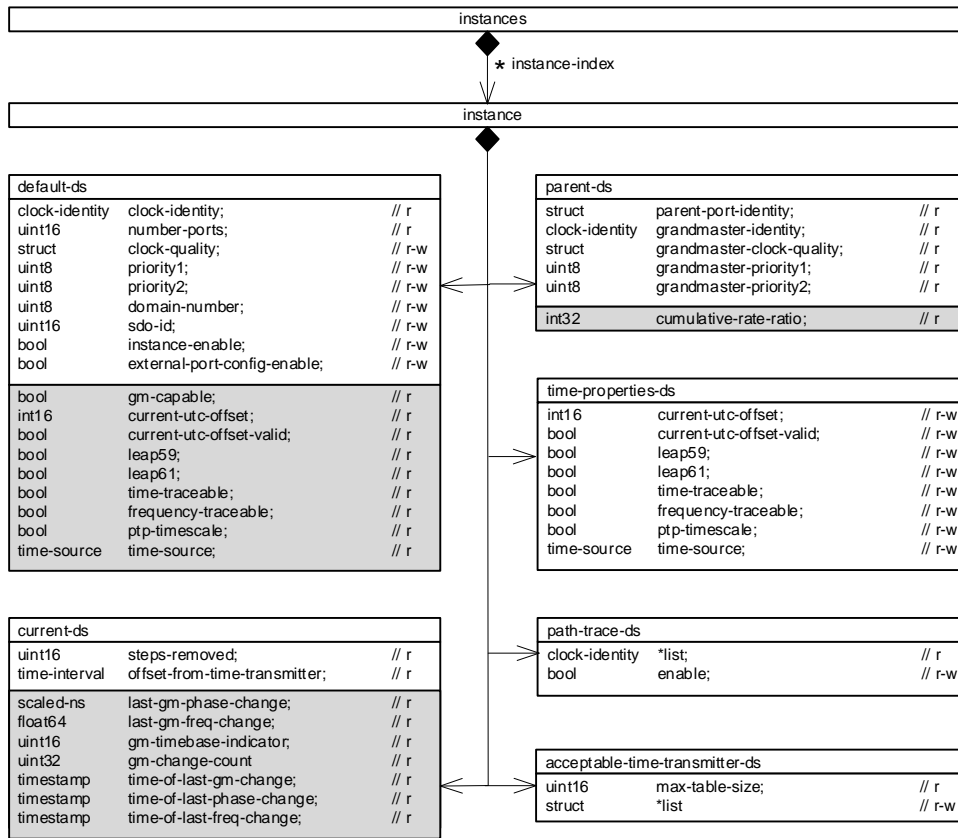
This document is an individual contribution in support of the comment resolution of P802.1ASdn/D2.0 in preparation of the subsequent draft of P802.1ASdn.
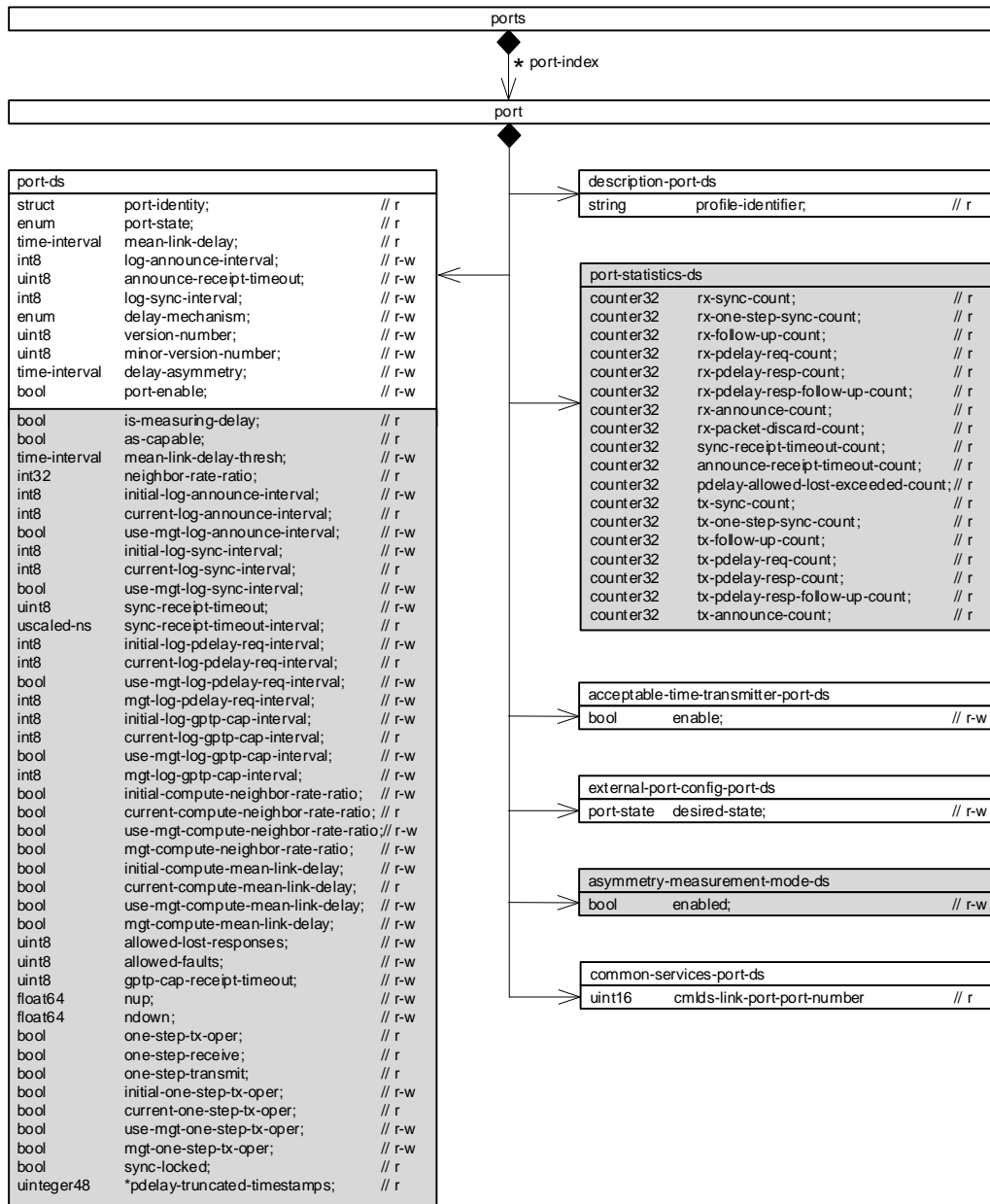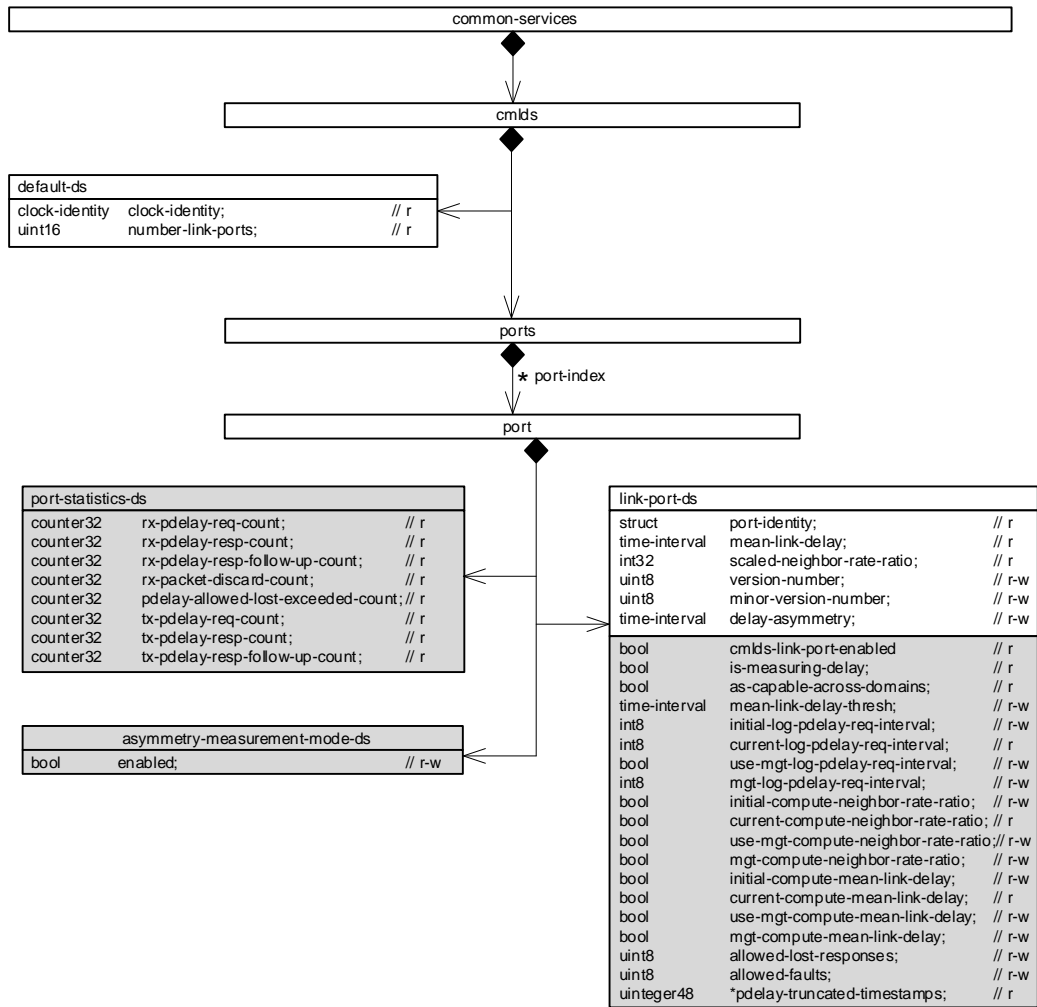
8   Replacement for Figure 17-1

ieee802-dot1as-ptp
imports ieee1588-ptp

ptp

instances

★ instance-index

instance

default-ds
(members shared with 1588)
(members specific to 802.1AS)

time-properties-ds
(members shared with 1588)

current-ds
(members shared with 1588)
(members specific to 802.1AS)

path-trace-ds
(members shared with 1588)

parent-ds
(members shared with 1588)
(members specific to 802.1AS)

acceptable-time-transmitter-ds
(members shared with 1588)

ports

★ port-index

port

port-ds
(members shared with 1588)
(members specific to 802.1AS)

external-port-config-port-ds
(members shared with 1588)

description-port-ds
(members shared with 1588)

asymmetry-measurement-mode-ds
(members specific to 802.1AS)

port-statistics-ds
(members specific to 802.1AS)

common-services-port
(members shared with 1588)

acceptable-time-transmitter-port-ds
(members shared with 1588)

common-services

cmlds

default-ds
(members shared with 1588)

ports

★ port-index

port

link-port-ds
(members shared with 1588)
(members specific to 802.1AS)

port-statistics-ds
(members specific to 802.1AS)

asymmetry-measurement-mode-ds
(members specific to 802.1AS)

9

10   # Replacement for Figure 17-2

instances

★ instance-index

instance

default-ds

clock-identity	clock-identity;	// r
uint16	number-ports;	// r
struct	clock-quality;	// r-w
uint8	priority1;	// r-w
uint8	priority2;	// r-w
uint8	domain-number;	// r-w
uint16	sdo-id;	// r-w
bool	instance-enable;	// r-w
bool	external-port-config-enable;	// r-w
bool	gm-capable;	// r
int16	current-utc-offset;	// r
bool	current-utc-offset-valid;	// r
bool	leap59;	// r
bool	leap61;	// r
bool	time-traceable;	// r
bool	frequency-traceable;	// r
bool	ptp-timescale;	// r
time-source	time-source;	// r

parent-ds

struct	parent-port-identity;	// r
clock-identity	grandmaster-identity;	// r
struct	grandmaster-clock-quality;	// r
uint8	grandmaster-priority1;	// r
uint8	grandmaster-priority2;	// r
int32	cumulative-rate-ratio;	// r

time-properties-ds

int16	current-utc-offset;	// r-w
bool	current-utc-offset-valid;	// r-w
bool	leap59;	// r-w
bool	leap61;	// r-w
bool	time-traceable;	// r-w
bool	frequency-traceable;	// r-w
bool	ptp-timescale;	// r-w
time-source	time-source;	// r-w

current-ds

uint16	steps-removed;	// r
time-interval	offset-from-time-transmitter;	// r
scaled-ns	last-gm-phase-change;	// r
float64	last-gm-freq-change;	// r
uint16	gm-timebase-indicator;	// r
uint32	gm-change-count;	// r
timestamp	time-of-last-gm-change;	// r
timestamp	time-of-last-phase-change;	// r
timestamp	time-of-last-freq-change;	// r

path-trace-ds

clock-identity	*list;	// r
bool	enable;	// r-w

acceptable-time-transmitter-ds

uint16	max-table-size;	// r
struct	*list	// r-w

11

12 Replacement for Figure 17-3

```
ports
     ◆
     * port-index
port
     ◆
```

port-ds

struct	port-identity;	// r
enum	port-state;	// r
time-interval	mean-link-delay;	// r
int8	log-announce-interval;	// r-w
uint8	announce-receipt-timeout;	// r-w
int8	log-sync-interval;	// r-w
enum	delay-mechanism;	// r-w
uint8	version-number;	// r-w
uint8	minor-version-number;	// r-w
time-interval	delay-asymmetry;	// r-w
bool	port-enable;	// r-w
bool	is-measuring-delay;	// r
bool	as-capable;	// r
time-interval	mean-link-delay-thresh;	// r-w
int32	neighbor-rate-ratio;	// r
int8	initial-log-announce-interval;	// r-w
int8	current-log-announce-interval;	// r
bool	use-mgt-log-announce-interval;	// r-w
int8	initial-log-sync-interval;	// r-w
int8	current-log-sync-interval;	// r
bool	use-mgt-log-sync-interval;	// r-w
uint8	sync-receipt-timeout;	// r-w
uscaled-ns	sync-receipt-timeout-interval;	// r
int8	initial-log-pdelay-req-interval;	// r-w
int8	current-log-pdelay-req-interval;	// r
bool	use-mgt-log-pdelay-req-interval;	// r-w
int8	mgt-log-pdelay-req-interval;	// r-w
int8	initial-log-gptp-cap-interval;	// r-w
int8	current-log-gptp-cap-interval;	// r
bool	use-mgt-log-gptp-cap-interval;	// r-w
int8	mgt-log-gptp-cap-interval;	// r-w
bool	initial-compute-neighbor-rate-ratio;	// r-w
bool	current-compute-neighbor-rate-ratio;	// r
bool	use-mgt-compute-neighbor-rate-ratio;	// r-w
bool	mgt-compute-neighbor-rate-ratio;	// r-w
bool	initial-compute-mean-link-delay;	// r-w
bool	current-compute-mean-link-delay;	// r
bool	use-mgt-compute-mean-link-delay;	// r-w
bool	mgt-compute-mean-link-delay;	// r-w
uint8	allowed-lost-responses;	// r-w
uint8	allowed-faults;	// r-w
uint8	gptp-cap-receipt-timeout;	// r-w
float64	nup;	// r-w
float64	ndown;	// r-w
bool	one-step-tx-oper;	// r
bool	one-step-receive;	// r
bool	one-step-transmit;	// r
bool	initial-one-step-tx-oper;	// r-w
bool	current-one-step-tx-oper;	// r
bool	use-mgt-one-step-tx-oper;	// r-w
bool	mgt-one-step-tx-oper;	// r-w
bool	sync-locked;	// r
uinteger48	*pdelay-truncated-timestamps;	// r

description-port-ds

string	profile-identifier;	// r

port-statistics-ds

counter32	rx-sync-count;	// r
counter32	rx-one-step-sync-count;	// r
counter32	rx-follow-up-count;	// r
counter32	rx-pdelay-req-count;	// r
counter32	rx-pdelay-resp-count;	// r
counter32	rx-pdelay-resp-follow-up-count;	// r
counter32	rx-announce-count;	// r
counter32	rx-packet-discard-count;	// r
counter32	sync-receipt-timeout-count;	// r
counter32	announce-receipt-timeout-count;	// r
counter32	pdelay-allowed-lost-exceeded-count;	// r
counter32	tx-sync-count;	// r
counter32	tx-one-step-sync-count;	// r
counter32	tx-follow-up-count;	// r
counter32	tx-pdelay-req-count;	// r
counter32	tx-pdelay-resp-count;	// r
counter32	tx-pdelay-resp-follow-up-count;	// r
counter32	tx-announce-count;	// r

acceptable-time-transmitter-port-ds

bool	enable;	// r-w

external-port-config-port-ds

port-state	desired-state;	// r-w

asymmetry-measurement-mode-ds

bool	enabled;	// r-w

common-services-port-ds

uint16	cmlds-link-port-port-number	// r

13

14 # Replacement for Figure 17-4

15

16 # Replacement for the contents in 17.6 of P802.1ASdn-D2.0

17 ## With change indications (for review, not for replacement)

18 ```
module ieee802-dot1as-gptp {
```
19  ```
  yang-version "1.1";
```
20 ```
  namespace urn:ieee:std:802.1AS:yang:ieee802-dot1as-gptp;
```
21  ```
  prefix dot1as-gptp;
```
22
23 ```
  import ietf-yang-types {
```
24  ```
    prefix yang;
```
25 ```
  }
```
26  ```
  import ieee1588-ptp-tt {
```
27 ```
    prefix ptp-tt;
```
28  ```
  }
```
29
30 ```
  organization
```

```
31        "IEEE 802.1 Working Group";
32      contact
33        "WG-URL: http://ieee802.org/1/
34        WG-EMail: stds-802-1-l@ieee.org


36

37        Contact: IEEE 802.1 Working Group Chair
38               Postal: C/O IEEE 802.1 Working Group
39                      IEEE Standards Association
40                      445 Hoes Lane
41                     Piscataway, NJ 08854
42                      USA



45        E-mail: stds-802-1-chairs@ieee.org";
46      description
47        "Management objects that control timing and synchronization
48      for time
49      sensitive applications, as specified in
50      IEEE Std 802.1AS-2020.
51  .

53        Copyright (C) IEEE (20234).
54      This version of this YANG module is part
55      of IEEE Std 802.1AS;
56      see the standard itself for full legal notices.";

58    revision 20234-04-041 {
59      description
60        "Published as part of IEEE Std 802.1ASdn-2023.
61        4. Initial version.";
62      reference
63        "IEEE Std 802.1ASdn-2023 - YANG Data Model - Timing and Synchronization for
64  Time-Sensitive
65        Applications: IEEE Std 802.1AS-2020, IEEE Std 802.1AS-2020/Cor
66        1-2021, IEEE Std 802.1ASdr-2023, IEEE Std 802.1ASdn-2024. IEEE Std
67        1588 - IEEE Standard for a Precision Clock Synchronization Protocol
68        for Networked Measurement and Control Systems: IEEE Std 1588-2019,
69        IEEE Std 1588e-2024.";
70    }

72    typedef scaled-ns {
73      type string {
74        pattern "[0-9A-F]{2}(-[0-9A-F]{2}){11}";
75      }
76      description
```

```
77         "The IEEE Std 802.1AS ScaledNs type represents
78         signed values of
79         time and time interval in units
80         of 2^16 ns, as a signed 96-bit ~~integer.~~
81         ~~YANG does not support a signed 96-bit~~
82         integer.
83         Each of the 12 octets is represented ~~in YANG~~ as a pair of
84         hexadecimal characters, using uppercase for a letter.
85         ~~Each octet in the array is~~ Octets are
86         separated by ~~the~~a dash
87         character. The most significant octet is first.";
88       reference
89         "6.4.3.1 of IEEE Std 802.1AS~-2020~";
90     }
91
92     typedef uscaled-ns {
93       type string {
94         pattern "[0-9A-F]{2}(-[0-9A-F]{2}){11}";
95       }
96       description
97         "The IEEE Std 802.1AS UScaledNs type represents
98         unsigned values of
99         time and time interval in units
100        of 2^16 ns, as an unsigned 96-bit ~~integer.~~
101        ~~YANG does not support an unsigned 96-bit~~
102        integer.
103        Each of the 12 octets is represented ~~in YANG~~ as a pair of
104        hexadecimal characters, using uppercase for a letter.
105        ~~Each octet in the array is~~ Octets are
106        separated by ~~the~~a dash
107        character. The most significant octet is first.";
108      reference
109        "6.4.3.2 of IEEE Std 802.1AS
110        3.4 of IEEE Std 754-20~20~19";
111    }
112
113    typedef float64 {
114      type string {
115        pattern "[0-9A-F]{2}(-[0-9A-F]{2}){7}";
116      }
117      description
118        "The IEEE Std 802.1AS Float64 type represents
119        IEEE Std 754 ~~binary64 (64-bit~~
120        ~~double-precision floating-point format).~~
121        ~~YANG does not support floating-point,~~
122
```

```
123        binary64. Each of the 8 octets is represented in YANG as a pair of
124        hexadecimal characters, using uppercase for a letter.
125        Each octet in the array is Octets are
126        separated by thea dash
127        character. The most significant octet is first.";
128      reference
129        "6.4.2 of IEEE Std 802.1AS-2020";
130    }
131  typedef uinteger48 {
132    type uint64 {
133      range "0..281474976710655";
134    }
135    description
136      "48-bit unsigned integer data type.";
137    reference
138      "6.4.2 of IEEE Std 802.1AS";
139    }
140  augment
141    "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:default-ds" {
142    description
143      "Augment IEEE Std 1588 defaultDS.";
144
145    leaf gm-capable {
146      type boolean;
147      config false;
148      description
149        "The value is true if the time-aware system is capable
150        of being a
151        grandmaster, and false if the time-aware
152        system is not capable of
153        being a grandmaster.";
154      reference
155        "14.2.7 of IEEE Std 802.1AS-2020";
156    }
157
158    leaf current-utc-offset {
159      when
160        "../current-utc-offset-valid='true'";
161      type int16;
162      config false;
163      description
164        "Offset from UTC (TAI - UTC).
165        The offset is in units of seconds.
166        This leaf applies to the ClockTimeTransmitter entity
167        (i.e., local
168        only, unrelated to a remote GM).";
```

```
169        reference
170          "14.2.8 of IEEE Std 802.1AS-2020";
171      }
172
173      leaf current-utc-offset-valid {
174        type boolean;
175        config false;
176        description
177          "The value of current-utc-offset-valid shall be true
178 ——————— if the value
179 ——————— of current-utc-offset is known to be
180 ——————— correct, otherwise it shall
181 ——————— be false.
182 ——————— This leaf applies to the ClockTimeTransmitter entity
183          (i.e., local only, unrelated to a remote GM).";
184        reference
185          "14.2.9 of IEEE Std 802.1AS-2020";
186      }
187
188      leaf leap59 {
189        type boolean;
190        config false;
191        description
192          "If the timescale is PTP, a true value for leap59
193 ——————— shall indicate
194 ——————— that the last minute of the
195 ——————— current UTC day contains 59 seconds.
196          If the timescale is not PTP, the value shall be
197 ——————— false.
198 ——————— false. This leaf
199 ——————— applies to the ClockTimeTransmitter entity
200 ——————— (i.e., local only,
201 ——————— unrelated to a remote GM).";
202        reference
203          "14.2.10 of IEEE Std 802.1AS-2020";
204      }
205
206      leaf leap61 {
207        type boolean;
208        config false;
209        description
210          "If the timescale is PTP, a true value for leap61
211 ——————— shall indicate
212 ——————— that the last minute of the
213 ——————— current UTC day contains 61 seconds.
214          If the timescale is not PTP, the value shall be
```

```
215              false.
216              false. This leaf
217          applies to the ClockTimeTransmitter entity
218          (i.e., local only,
219          unrelated to a remote GM).";
220      reference
221          "14.2.11 of IEEE Std 802.1AS-2020";
222    }

224    leaf time-traceable {
225      type boolean;
226      config false;
227      description
228        "The value of time-traceable shall be true if the
229        timescale is
230        traceable to a primary reference;
231        otherwise, the value shall be false.
232        false. This leaf applies to the ClockTimeTransmitter entity
233        (i.e., local only, unrelated to a remote GM).";
234      reference
235        "14.2.12 of IEEE Std 802.1AS-2020";
236    }

238    leaf frequency-traceable {
239      type boolean;
240      config false;
241      description
242        "The value of frequency-traceable shall be true if
243        the frequency
244        determining the timescale is traceable
245        to a primary reference;
246        otherwise, the value shall
247        be false.
248        This leaf applies to the
249        ClockTimeTransmitter entity
250        (i.e., local only, unrelated to a
251        remote GM).";
252      reference
253        "14.2.13 of IEEE Std 802.1AS-2020";
254    }

256    leaf ptp-timescale {
257      type boolean;
258      config false;
259      description
260        "If ptp-timescale is true, the timescale of the
```

```
261              the ClockTimeTransmitter entity is PTP, which is
262              the elapsed time
263              since the PTP epoch measured
264              using the second defined by
265              International Atomic
266              Time (TAI).
267              If ptp-timescale is false, the
268              timescale of
269              the ClockTimeTransmitter entity is ARB, which is the
270              the elapsed time since an arbitrary epoch.
271              This leaf applies to the
272              ClockTimeTransmitter entity
273              (i.e., local only, unrelated to a
274              remote GM).";
275         reference
276           "14.2.14 of IEEE Std 802.1AS-2020";
277       }
278
279       leaf time-source {
280         type identityref {
281           base ptp-tt:time-source;
282         }
283         config false;
284         description
285           "The source of time used by the Grandmaster Clock
286              This leaf
287              applies to the ClockTimeTransmitter entity
288              (i.e., local only,
289              unrelated to a remote GM).";
290         reference
291           "14.2.15 of IEEE Std 802.1AS-2020";
292       }
293     }
294
295     augment
296       "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:current-ds" {
297       description
298         "Augment IEEE Std 1588 currentDS.";
299
300       leaf last-gm-phase-change {
301         type scaled-ns;
302         config false;
303         description
304           "Phase change that occurred on the most recent
305              change in either
306              the Grandmaster PTP Instance
```

```
307 ─────── or gm-timebase-indicator leaf.";
308          reference
309             "14.3.4 of IEEE Std 802.1AS-2020";
310        }
311
312     leaf last-gm-freq-change {
313        type float64;
314        config false;
315        description
316           "Frequency change that occurred on the most recent
317 ─────── change in
318 ─────── either the Grandmaster PTP Instance
319 ─────── or gm-timebase-indicator
320 ─────── leaf.";
321          reference
322             "14.3.5 of IEEE Std 802.1AS-2020";
323        }
324
325     leaf gm-timebase-indicator {
326        type uint16;
327        config false;
328        description
329           "The timeBaseIndicator of the current
330 ─────── Grandmaster PTP Instance.";
331          reference
332             "14.3.6 of IEEE Std 802.1AS-2020";
333        }
334
335     leaf gm-change-count {
336        type yang:counter32;
337        config false;
338        description
339           "This statistics counter tracks the number of times the
340           the Grandmaster PTP Instance has changed in a
341 ─────── gPTP domain.";
342          reference
343             "14.3.7 of IEEE Std 802.1AS-2020";
344        }
345
346     leaf time-of-last-gm-change {
347        type yang:timestamp;
348        config false;
349        description
350           "System time when the most recent Grandmaster Clock change
351           change occurred in a gPTP domain.
352 ─────── This leaf's type is YANG timestamp,
```

```
353            which is based
354            on system time. System time is an unsigned integer
355            in units of 10 milliseconds, using an epoch defined by the
356            by the implementation (typically time of boot-up).";
357          reference
358            "14.3.8 of IEEE Std 802.1AS 2020";
359        }
360
361        leaf time-of-last-phase-change {
362          type yang:timestamp;
363          config false;
364          description
365            "System time when the most recent change in Grandmaster Clock
366            Clock phase occurred.
367            This leaf's type is YANG timestamp, which is based
368            based on system time. System time is an unsigned integer
369            in units
370            of 10 milliseconds, using an epoch defined
371            by the implementation
372            (typically time of boot-up).";
373          reference
374            "14.3.9 of IEEE Std 802.1AS 2020";
375        }
376
377        leaf time-of-last-freq-change {
378          type yang:timestamp;
379          config false;
380          description
381            "System time when the most recent change in Grandmaster Clock
382            Clock frequency occurred.
383            This leaf's type is YANG timestamp, which is based
384            based on system time. System time is an unsigned integer
385            in units
386            of 10 milliseconds, using an epoch defined
387            by the implementation
388            (typically time of boot-up).";
389          reference
390            "14.3.10 of IEEE Std 802.1AS 2020";
391        }
392    }
393
394    augment "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:parent-ds" {
395      description
396        "Augment IEEE Std 1588 parentDS.";
397
398        leaf cumulative-rate-ratio {
```

```
399        type int32;
400        config false;
401        description
402           "Estimate of the ratio of the frequency of the Grandmaster Clock
403           Clock to the frequency of the LocalClock entity of this
404           PTP Instance.
405           cumulative-rate-ratio is expressed as
406           the fractional frequency
407           offset multiplied by 2^41,
408           i.e., the quantity (rateRatio -
409           1.0)(2^41).";
410        reference
411           "14.4.3 of IEEE Std 802.1AS-2020";
412      }
413    }
414
415    augment
416      "/ptp-tt:ptp"+
417      "/ptp-tt:instances"+
418      "/ptp-tt:instance"+
419      "/ptp-tt:ports"+
420      "/ptp-tt:port"+
421      "/ptp-tt:port-ds" {
422      description
423         "Augment IEEE Std 1588 portDS.
424
425         14.8.4 of IEEE Std 802.1AS-2020 specifies ptpPortEnabled
426         (ptp-port-enabled), which is provided in YANG as the
427         semantically
428         equivalent node in ieee1588-ptp named
429         port-enable (in port-ds).
430
431         14.8.15 of IEEE Std 802.1AS-2020 specifies
432         mgtSettableLogAnnounceInterval
433         (mgt-settable (mgt-log-announce-interval), which
434         is provided in
435         YANG as the semantically equivalent node in
436         ieee1588-ptp named
437         log-announce-interval (in port-ds). In the
438         context of
439         IEEE Std 802.1AS, log-announce-interval cannot be used
440         unless use-mgt-log-announce-interval is true.
441
442         14.8.20 of IEEE Std 802.1AS-2020 specifies
443         mgtSettableLogSyncInterval
444         (mgt-settable-log-sync-interval), which is provided in YANG
```

```
445        ——— as the
446    _____  semantically equivalent node in ieee1588-ptp named
447           log-sync-interval (in port-ds). In the context of
448    ———  IEEE Std 802.1AS,
449    _____  log-sync-interval cannot be used
450    ———  unless use-mgt-log-sync-interval
451    _____  is true.";
452
453        leaf is-measuring-delay {
454          type boolean;
455          config false;
456          description
457            "Boolean that is true if the port is measuring
458    ————— PTP Link
459    _____  propagation delay.";
460          reference
461            "14.8.6 of IEEE Std 802.1AS-2020";
462        }
463
464        leaf as-capable {
465          type boolean;
466          config false;
467          description
468            "Boolean that is true if and only if it is determined
469    —————  that this
470    _____  PTP Instance and the PTP Instance at the
471    —————  other end of the link
472    _____  attached to this port can
473    —————  interoperate with each other via the
474    _____  IEEE Std
475    ———  802.1AS protocol.";
476          reference
477            "10.2.5.1 of IEEE Std 802.1AS-2020
478            14.8.7 of IEEE Std 802.1AS-2020";
479        }
480
481        leaf mean-link-delay-thresh {
482          type ptp-tt:time-interval;
483          description
484            "Propagation time threshold for mean-link-delay,
485    —————  above which a
486    _____  port is not considered capable of
487    —————  participating in the IEEE Std
488    _____  802.1AS protocol.";
489          reference
490            "14.8.9 of IEEE Std 802.1AS-2020";
```

```
491        }
492
493      leaf neighbor-rate-ratio {
494        type int32;
495        config false;
496        description
497          "Estimate of the ratio of the frequency of the LocalClock entity
498          entity of the PTP Instance at the other end of the
499          link attached to this
500          PTP Port, to the frequency of the
501          LocalClock entity of this PTP
502          Instance.
503          neighbor-rate-ratio is expressed as the fractional
504          frequency offset multiplied by 2^41,
505          i.e., the quantity
506          (rateRatio - 1.0)(2^41).";
507        reference
508          "14.8.11 of IEEE Std 802.1AS-2020";
509      }
510
511      leaf initial-log-announce-interval {
512        type int8;
513        description
514          "When use-mgt-log-announce-interval is false
515          (i.e., change with
516          Signaling message), this is the
517          the logarithm to base 2 of the
518          announce
519          interval used when the port is initialized.";
520        reference
521          "14.8.12 of IEEE Std 802.1AS-2020";
522      }
523
524      leaf current-log-announce-interval {
525        type int8;
526        config false;
527        description
528          "Logarithm to base 2 of the current
529          announce interval.";
530        reference
531          "14.8.13 of IEEE Std 802.1AS-2020";
532      }
533
534      leaf use-mgt-log-announce-interval {
535        type boolean;
536        description
```

```
537           "Boolean that determines the source of the
538  ───────  announce interval. If
539           If the value is true, the announce interval
540           (current-log-announce-interval) is set equal to the value of
541           of mgt-log-announce-interval.
542  ───────  If the value is false, the announce
543  ───────  interval is determined
544  ───────  by the AnnounceIntervalSetting state
545  ───────  machine (i.e., changed
546  ───────  with Signaling message).";
547         reference
548           "14.8.14 of IEEE Std 802.1AS-2020";
549       }
550
551     leaf initial-log-sync-interval {
552       type int8;
553       description
554         "When use-mgt-log-sync-interval is false
555  ───────  (i.e., change with
556           Signaling message), this is the
557  ───────  the logarithm to base 2 of the sync
558           sync interval used when the port is initialized.";
559  ──    reference
560           "14.8.17 of IEEE Std 802.1AS-2020";
561       }
562
563     leaf current-log-sync-interval {
564       type int8;
565       config false;
566       description
567         "Logarithm to base 2 of the current sync
568  ───────  interval.";
569       reference
570           "14.8.18 of IEEE Std 802.1AS-2020";
571       }
572
573     leaf use-mgt-log-sync-interval {
574       type boolean;
575       description
576         "Boolean that determines the source of the
577  ───────  sync interval. If the
578           If the value is true, the sync interval
579  ───────  (current-log-sync-interval) is
580           set equal to the value
581  ───────  of mgt-log-sync-interval.
582  ───────  If the value is
```

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```
583          false, the sync interval is determined
584          by the SyncIntervalSetting
585          state machine (i.e., changed
586          with Signaling message).";
587        reference
588          "14.8.19 of IEEE Std 802.1AS 2020";
589      }
590
591      leaf sync-receipt-timeout {
592        type uint8;
593        description
594          "Number of sync intervals that a timeReceiver port waits
595          without
596          receiving synchronization information, before
597          assuming that the
598          timeTransmitter is no longer transmitting
599          synchronization
600          information and that the BTCA needs to be
601          run, if appropriate.";
602        reference
603          "14.8.21 of IEEE Std 802.1AS 2020";
604      }
605
606      leaf sync-receipt-timeout-interval {
607        type uscaled-ns;
608        config false;
609        description
610          "Time interval after which sync receipt timeout occurs if
611          if time-synchronization information has not been
612          received during the
613          interval.";
614        reference
615          "14.8.22 of IEEE Std 802.1AS 2020";
616      }
617
618      leaf initial-log-pdelay-req-interval {
619        type int8;
620        description
621          "When use-mgt-log-pdelay-req-interval is false
622          (i.e., change with
623          Signaling message), this is the
624          the logarithm to base 2 of the
625          Pdelay_Req transmit
626          interval used when the port is initialized.";
627        reference
628          "14.8.23 of IEEE Std 802.1AS 2020";
```

```
629        }
630
631      leaf current-log-pdelay-req-interval {
632        type int8;
633        config false;
634        description
635          "Logarithm to base 2 of the current Pdelay_Req transmit
636          interval.";
637        reference
638          "14.8.24 of IEEE Std 802.1AS-2020";
639      }
640
641      leaf use-mgt-log-pdelay-req-interval {
642        type boolean;
643        description
644          "Boolean that determines the source of the
645          Pdelay_Req transmit
646          interval.
647          If the value is true, the Pdelay_Req transmit interval
648          (current-log-pdelay-req-interval) is set equal to the value of
649          of mgt-log-pdelay-req-interval.
650          If the value is false, the
651          Pdelay_Req transmit interval is
652          determined by the
653          LinkDelayIntervalSetting state machine
654          (i.e., changed with
655          Signaling message).";
656        reference
657          "14.8.25 of IEEE Std 802.1AS-2020";
658      }
659
660      leaf mgt-log-pdelay-req-interval {
661        type int8;
662        description
663          "Logarithm to base 2 of the Pdelay_Req transmit interval,
664          used if
665          use-mgt-log-pdelay-req-interval is true.
666          This value is not used
667          if use-mgt-log-pdelay-req-interval
668          is false.";
669        reference
670          "14.8.26 of IEEE Std 802.1AS-2020";
671      }
672
673      leaf initial-log-gptp-cap-interval {
674        type int8;
```

```
675        description
676          "When use-mgt-log-gptp-cap-interval is false
677 ——————  (i.e., change with
678 ——————  Signaling message), this is the
679 ——————  the logarithm to base 2 of the
680 ——————  gPTP capable message
681 ——————  interval used when the port is initialized.";
682        reference
683          "14.8.27 of IEEE Std 802.1AS 2020";
684      }
685
686      leaf current-log-gptp-cap-interval {
687        type int8;
688        config false;
689        description
690          "Logarithm to base 2 of the current gPTP capable message
691          interval.";
692        reference
693          "14.8.28 of IEEE Std 802.1AS 2020";
694      }
695
696      leaf use-mgt-log-gptp-cap-interval {
697        type boolean;
698        description
699          "Boolean that determines the source of the
700 ——————  gPTP capable message
701 ——————  interval.
702 ——————  If the value is true, the gPTP capable message interval
703          (current-log-gptp-cap-interval) is set equal to the value of
704 ——————  of mgt-gptp-cap-req-interval.
705 ——————  If the value is false, the gPTP
706 ——————  capable message interval is
707 ——————  determined by the
708 ——————  GptpCapableMessageIntervalSetting
709 ——————  state machine (i.e., changed
710 ——————  with Signaling message).";
711        reference
712          "14.8.29 of IEEE Std 802.1AS 2020";
713      }
714
715      leaf mgt-log-gptp-cap-interval {
716        type int8;
717        description
718          "Logarithm to base 2 of the gPTP capable message interval, used
719          used if use-mgt-log-gptp-cap-interval is true.
720 ——————  This value is not used
```

```
721          if use-mgt-log-pdelay-req-interval
722 ——————— is false.";
723        reference
724          "14.8.30 of IEEE Std 802.1AS-2020";
725      }
726
727      leaf initial-compute-neighbor-rate-ratio {
728        type int8boolean;
729        description
730          "When use-mgt-compute-neighbor-rate-ratio is false
731 ——————— (i.e., change
732 ——————— with Signaling message), this is the
733 ——————— initial value of
734 ——————— computeNeighborRateRatio.";
735        reference
736          "14.8.31 of IEEE Std 802.1AS-2020";
737      }
738
739      leaf current-compute-neighbor-rate-ratio {
740        type int8boolean;
741        config false;
742        description
743          "Current value of computeNeighborRateRatio.";
744        reference
745          "14.8.32 of IEEE Std 802.1AS-2020";
746      }
747
748      leaf use-mgt-compute-neighbor-rate-ratio {
749        type boolean;
750        description
751          "Boolean that determines the source of
752 ——————— computeNeighborRateRatio..
753          If the value is true, computeNeighborRateRatio
754 ——————— is set equal to
755 ——————— the value of mgt-compute-neighbor-rate-ratio.
756 ——————— If the value is
757 ——————— false, computeNeighborRateRatio is
758 ——————— determined by the
759 ——————— LinkDelayIntervalSetting
760 ——————— state machine (i.e., changed with
761 ——————— Signaling message).";
762        reference
763          "14.8.33 of IEEE Std 802.1AS-2020";
764      }
765
766      leaf mgt-compute-neighbor-rate-ratio {
```

```
767        type int8boolean;
768        description
769          "Value of computeNeighborRateRatio, used if
770          use-mgt-compute-neighbor-rate-ratio is true.
771          This value is not
772          used if use-mgt-compute-neighbor-rate-ratio
773          is false.";
774        reference
775          "14.8.34 of IEEE Std 802.1AS-2020";
776      }
777
778    leaf initial-compute-mean-link-delay {
779        type int8boolean;
780        description
781          "When use-mgt-compute-mean-link-delay is false
782          (i.e., change with
783          Signaling message), this is the
784          initial value of
785          computeMeanLinkDelay.";
786        reference
787          "14.8.35 of IEEE Std 802.1AS-2020";
788      }
789
790    leaf current-compute-mean-link-delay {
791        type int8boolean;
792        config false;
793        description
794          "Current value of computeMeanLinkDelay.";
795        reference
796          "14.8.36 of IEEE Std 802.1AS-2020";
797      }
798
799    leaf use-mgt-compute-mean-link-delay {
800        type boolean;
801        description
802          "Boolean that determines the source of
803          computeMeanLinkDelay. If
804          If the value is true, computeMeanLinkDelay
805          is set equal to the value
806          of mgt-compute-mean-link-delay.
807          If the value is false,
808          computeMeanLinkDelay is
809          determined by the
810          LinkDelayIntervalSetting
811          state machine (i.e., changed with
812          Signaling message).";
```

```
813        reference
814          "14.8.37 of IEEE Std 802.1AS-2020";
815      }
816
817      leaf mgt-compute-mean-link-delay {
818        type int8boolean;
819        description
820          "Value of computeMeanLinkDelay, used if
821          use-mgt-compute-mean-link-delay is true.
822 ──────── This value is not used
823 _____ if use-mgt-compute-mean-link-delay
824 ──────── is false.";
825        reference
826          "14.8.38 of IEEE Std 802.1AS-2020";
827      }
828
829      leaf allowed-lost-responses {
830        type uint8;
831        description
832          "Number of Pdelay_Req messages for which a valid response is not
833          is not received, above which a port is considered to not
834 ──────── be exchanging
835 _____ peer delay messages with its neighbor.";
836        reference
837          "14.8.39 of IEEE Std 802.1AS-2020";
838      }
839
840      leaf allowed-faults {
841        type uint8;
842        description
843          "Number of faults above which asCapable is set to false.";
844        reference
845          "14.8.40 of IEEE Std 802.1AS-2020";
846      }
847
848      leaf gptp-cap-receipt-timeout {
849        type uint8;
850        description
851          "Number of transmission intervals that a port waits without
852          receiving the gPTP capable TLV, before assuming that the
853 ──────── neighbor
854 _____ port is no longer invoking the gPTP protocol.";
855        reference
856          "14.8.41 of IEEE Std 802.1AS-2020";
857      }
858
```

```
859      leaf nup {
860        type float64;
861        description
862          "For an OLT port of an IEEE Std 802.3 EPON link, this value is
863          is the effective index of refraction for the EPON
864          upstream
865          wavelength light of the optical path";
866        reference
867          "14.8.43 of IEEE Std 802.1AS-2020";
868      }
869
870      leaf ndown {
871        type float64;
872        description
873          "For an OLT port of an IEEE 802.3 EPON link, this value is the
874          is the effective index of refraction for the EPON
875          downstream wavelength
876          light of the optical path";
877        reference
878          "14.8.44 of IEEE Std 802.1AS-2020";
879      }
880
881      leaf one-step-tx-oper {
882        type boolean;
883        config false;
884        description
885          "This value is true if the port is sending one-step Sync
886          Sync messages, and false if the port is sending
887          two-step Sync and
888          Follow-Up messages.";
889        reference
890          "14.8.45 of IEEE Std 802.1AS-2020";
891      }
892
893      leaf one-step-receive {
894        type boolean;
895        config false;
896        description
897          "This value is true if the port is capable of
898          receiving and
899          processing one-step Sync messages.";
900        reference
901          "14.8.46 of IEEE Std 802.1AS-2020";
902      }
903
904      leaf one-step-transmit {
```

```
905        type boolean;
906        config false;
907        description
908          "This value is true if the port is capable of
909 ─────── transmitting
910 ─────── one-step Sync messages.";
911      reference
912          "14.8.47 of IEEE Std 802.1AS-2020";
913    }
914
915    leaf initial-one-step-tx-oper {
916      type int8boolean;
917      description
918        "When use-mgt-one-step-tx-oper is false
919 ─────── (i.e., change with
920 ─────── Signaling message), this is the
921 ─────── initial value of
922 ─────── current-one-step-tx-oper.";
923      reference
924          "14.8.48 of IEEE Std 802.1AS-2020";
925    }
926
927    leaf current-one-step-tx-oper {
928      type int8boolean;
929      config false;
930      description
931        "This value is true if the port is configured to
932 ─────── transmit
933 ─────── one-step Sync messages, either via management
934        (mgt-one-step-tx-oper) or Signaling. If both
935        current-one-step-tx-oper and one-step-transmit
936 ─────── are true, the port
937 ─────── transmits one-step Sync messages
938 ─────── (i.e., one-step-tx-oper true).";
939      reference
940          "14.8.49 of IEEE Std 802.1AS-2020";
941    }
942
943    leaf use-mgt-one-step-tx-oper {
944      type boolean;
945      description
946        "Boolean that determines the source of
947 ─────── current-one-step-tx-oper.
948        If the value is true, current-one-step-tx-oper
949 ─────── is set equal to
950 ─────── the value of mgt-one-step-tx-oper.
```

```
951              If the value is false,
952              current-one-step-tx-oper is
953              determined by the
954              OneStepTxOperSetting
955              state machine (i.e., changed with Signaling
956              message).";
957          reference
958            "14.8.50 of IEEE Std 802.1AS-2020";
959        }
960
961      leaf mgt-one-step-tx-oper {
962        type int8boolean;
963        description
964          "If use-mgt-one-step-tx-oper is true,
965          current-one-step-tx-oper is
966          set equal to this value.
967          This value is not used if
968          use-mgt-one-step-tx-oper
969          is false.";
970          reference
971            "14.8.51 of IEEE Std 802.1AS-2020";
972        }
973
974      leaf sync-locked {
975        type boolean;
976        config false;
977        description
978          "This value is true if the port will transmit a Sync as
979          soon as
980          possible after the timeReceiver port receives a Sync
981          message.";
982          reference
983            "14.8.52 of IEEE Std 802.1AS-2020";
984        }
985
986      leaf-list pdelay-truncated-timestamps {
987        type uint64 {
988          range "0..281474976710655";
989        }
990        config falseeger48;
991        config false;
992        min-elements 4;
993        max-elements 4;
994        description
995          "For full-duplex IEEE Std 802.3 media, and CSN media that use the
996          the peer-to-peer delay mechanism to measure path delay,
```

```
997              the values of
998              the four elements of this leaf-list correspond
999              to the timestamps
1000             t1, t2, t3, and t4, listed in that order.
1001             Each timestamp is
1002             expressed in units of 2^-16 ns (i.e., the
1003             value of each array
1004             element is equal to the remainder obtained
1005             upon dividing the
1006             respective timestamp, expressed in units of
1007             2^-16 ns, by 2^48).
1008             At any given time, the timestamp values
1009             stored in the array are
1010             for the same, and most recently
1011             completed, peer delay message
1012             exchange. For each timestamp,
1013             only 48-bits are valid (the upper
1014             16-bits are always zero).";
1015           reference
1016             "14.8.53 of IEEE Std 802.1AS-2020";
1017       }
1018     }
1019
1020   augment
1021     "/ptp-tt:ptp"+
1022       "/ptp-tt:instances"+
1023       "/ptp-tt:instance"+
1024       "/ptp-tt:ports"+
1025       "/ptp-tt:port" {
1026     description
1027       "Augment to add port-statistics-ds to IEEE Std 1588 PTP Port.";
1028
1029     container port-statistics-ds {
1030       description
1031         "Provides counters associated with the port of the
1032         PTP Instance.";
1033       reference
1034         "14.10 of IEEE Std 802.1AS-2020";
1035
1036       leaf rx-sync-count {
1037         type yang:counter32;
1038         config false;
1039         description
1040           "Counter that increments every time synchronization
1041           information
1042           is received.";
```

```
1043            reference
1044                "14.10.2 of IEEE Std 802.1AS-2020";
1045          }
1046
1047      leaf rx-one-step-sync-count {
1048        type yang:counter32;
1049        config false;
1050        description
1051          "Counter that increments every time a one-step Sync
1052          message is
1053            received.";
1054          reference
1055            "14.10.3 of IEEE Std 802.1AS-2020";
1056        }
1057
1058      leaf rx-follow-up-count {
1059        type yang:counter32;
1060        config false;
1061        description
1062          "Counter that increments every time a Follow_Up
1063          message is
1064            received.";
1065          reference
1066            "14.10.4 of IEEE Std 802.1AS-2020";
1067        }
1068
1069      leaf rx-pdelay-req-count {
1070        type yang:counter32;
1071        config false;
1072        description
1073          "Counter that increments every time a Pdelay_Req
1074          message is
1075            received.";
1076          reference
1077            "14.10.5 of IEEE Std 802.1AS-2020";
1078        }
1079
1080      leaf rx-pdelay-resp-count {
1081        type yang:counter32;
1082        config false;
1083        description
1084          "Counter that increments every time a Pdelay_Resp
1085          message is
1086            received.";
1087          reference
1088            "14.10.6 of IEEE Std 802.1AS-2020";
```

```
1089          }
1090
1091          leaf rx-pdelay-resp-follow-up-count {
1092            type yang:counter32;
1093            config false;
1094            description
1095              "Counter that increments every time a Pdelay_Resp_Follow_Up
1096              message is received.";
1097            reference
1098              "14.10.7 of IEEE Std 802.1AS 2020";
1099          }
1100
1101          leaf rx-announce-count {
1102            type yang:counter32;
1103            config false;
1104            description
1105              "Counter that increments every time an Announce
1106              message is
1107              received.";
1108            reference
1109              "14.10.8 of IEEE Std 802.1AS 2020";
1110          }
1111
1112          leaf rx-packet-discard-count {
1113            type yang:counter32;
1114            config false;
1115            description
1116              "Counter that increments every time a PTP message of the
1117              of the respective PTP Instance is discarded.";
1118            reference
1119              "14.10.9 of IEEE Std 802.1AS 2020";
1120          }
1121
1122          leaf sync-receipt-timeout-count {
1123            type yang:counter32;
1124            config false;
1125            description
1126              "Counter that increments every time a sync receipt timeout
1127              timeout occurs.";
1128            reference
1129              "14.10.10 of IEEE Std 802.1AS 2020";
1130          }
1131
1132          leaf announce-receipt-timeout-count {
1133            type yang:counter32;
1134            config false;
```

```
1135          description
1136            "Counter that increments every time an announce receipt timeout
1137            timeout occurs.";
1138          reference
1139            "14.10.11 of IEEE Std 802.1AS-2020";
1140        }
1141
1142        leaf pdelay-allowed-lost-exceeded-count {
1143          type yang:counter32;
1144          config false;
1145          description
1146            "Counter that increments every time the value of the variable
1147            variable lostResponses exceeds the value of the variable
1148            allowedLostResponses, in the RESET state of the
1149            MDPdelayReq
1150            state machine.";
1151          reference
1152            "14.10.12 of IEEE Std 802.1AS-2020";
1153        }
1154
1155        leaf tx-sync-count {
1156          type yang:counter32;
1157          config false;
1158          description
1159            "Counter that increments every time synchronization
1160            information
1161            is transmitted.";
1162          reference
1163            "14.10.13 of IEEE Std 802.1AS-2020";
1164        }
1165
1166        leaf tx-one-step-sync-count {
1167          type yang:counter32;
1168          config false;
1169          description
1170            "Counter that increments every time a one-step Sync
1171            message is
1172            transmitted.";
1173          reference
1174            "14.10.14 of IEEE Std 802.1AS-2020";
1175        }
1176
1177        leaf tx-follow-up-count {
1178          type yang:counter32;
1179          config false;
1180          description
```

```
1181            "Counter that increments every time a Follow_Up
1182            message is
1183            transmitted.";
1184          reference
1185            "14.10.15 of IEEE Std 802.1AS-2020";
1186        }
1187
1188      leaf tx-pdelay-req-count {
1189        type yang:counter32;
1190        config false;
1191        description
1192          "Counter that increments every time a Pdelay_Req
1193          message is
1194          transmitted.";
1195        reference
1196          "14.10.16 of IEEE Std 802.1AS-2020";
1197      }
1198
1199      leaf tx-pdelay-resp-count {
1200        type yang:counter32;
1201        config false;
1202        description
1203          "Counter that increments every time a Pdelay_Resp
1204          message is
1205          transmitted.";
1206        reference
1207          "14.10.17 of IEEE Std 802.1AS-202014.10.17";
1208      }
1209
1210      leaf tx-pdelay-resp-follow-up-count {
1211        type yang:counter32;
1212        config false;
1213        description
1214          "Counter that increments every time a Pdelay_Resp_Follow_Up
1215          message is transmitted.";
1216        reference
1217          "14.10.18 of IEEE Std 802.1AS-2020";
1218      }
1219
1220      leaf tx-announce-count {
1221        type yang:counter32;
1222        config false;
1223        description
1224          "Counter that increments every time an Announce
1225          message is
1226          transmitted.";
```

```
1227          reference
1228            "14.10.19 of IEEE Std 802.1AS-2020";
1229        }
1230      }
1231    }
1232
1233    augment
1234      "/ptp-tt:ptp"+
1235      "/ptp-tt:instances"+
1236      "/ptp-tt:instance"+
1237      "/ptp-tt:ports"+
1238      "/ptp-tt:port" {
1239      description
1240        "Augment to add asymmetry-measurement-mode-ds to
1241        IEEE Std 1588 PTP
1242        Port.";
1243
1244      container asymmetry-measurement-mode-ds {
1245        description
1246          "Represents the capability to enable/disable the Asymmetry
1247          Compensation Measurement Procedure on a PTP Port.
1248        This data set
1249          is used instead of the CMLDS
1250        asymmetry-measurement-mode-ds when
1251          only a single PTP
1252        Instance is present (i.e., CMLDS is not used).";
1253        reference
1254          "14.13 of IEEE Std 802.1AS-2020
1255          Annex G of IEEE Std 802.1AS-2020";
1256
1257        leaf enabled {
1258          type boolean;
1259          description
1260            "For full-duplex IEEE Std 802.3 media, the value is true if an
1261            if an asymmetry measurement is being performed for the
1262            link attached
1263            to this PTP Port, and false otherwise.
1264            For all other media, the
1265            value shall be false.";
1266        }
1267      }
1268    }
1269
1270    augment
1271      "/ptp-tt:ptp"+
1272      "/ptp-tt:common-services"+
```

```
1273        "/ptp-tt:cmlds"+
1274        "/ptp-tt:ports"+
1275        "/ptp-tt:port"+
1276        "/ptp-tt:link-port-ds" {
1277      description
1278        "Augment IEEE Std 1588 cmldsLinkPortDS.
1279
1280        14.16.9 of IEEE Std 802.1AS-2020 specifies neighborRateRatio
1281        (neighbor-rate-ratio), which is provided in YANG as the
1282        semantically equivalent node in ieee1588-ptp named
1283        scaled-neighbor-rate-ratio (in link-port-ds).";
1284
1285      leaf cmlds-link-port-enabled {
1286        type boolean;
1287        config false;
1288        description
1289          "Boolean that is true if both delay-mechanism is common-p2p and
1290          and the value of ptp-port-enabled is true, for at least one
1291          PTP Port
1292          that uses the CMLDS; otherwise, the value is false.";
1293        reference
1294          "11.2.18.1 of IEEE Std 802.1AS-2020
1295          14.16.3 of IEEE Std 802.1AS-2020";
1296      }
1297
1298      leaf is-measuring-delay {
1299        type boolean;
1300        config false;
1301        description
1302          "This leaf is analogous to is-measuring-delay
1303          for a PTP Port, but
1304          applicable to this Link Port.";
1305        reference
1306          "14.16.4 of IEEE Std 802.1AS-2020";
1307      }
1308
1309      leaf as-capable-across-domains {
1310        type boolean;
1311        config false;
1312        description
1313          "This leaf is true when all PTP Instances (domains)
1314          for this Link
1315          Port detect proper exchange of Pdelay
1316          messages.";
1317        reference
1318          "11.2.2 of IEEE Std 802.1AS-2020
```

```
1319              14.16.5 of IEEE Std 802.1AS 2020";
1320          }
1321
1322          leaf mean-link-delay-thresh {
1323            type ptp-tt:time-interval;
1324            description
1325              "Propagation time threshold for mean-link-delay,
1326              above which a
1327              Link Port is not considered capable of
1328              participating in the IEEE
1329              Std 802.1AS protocol.";
1330            reference
1331              "14.16.7 of IEEE Std 802.1AS 2020";
1332          }
1333
1334          leaf initial-log-pdelay-req-interval {
1335            type int8;
1336            description
1337              "This leaf is analogous to initial-log-pdelay-req-interval for a
1338              for a PTP Port, but applicable to this Link Port.";
1339            reference
1340              "14.16.10 of IEEE Std 802.1AS 2020";
1341          }
1342
1343          leaf current-log-pdelay-req-interval {
1344            type int8;
1345            config false;
1346            description
1347              "This leaf is analogous to current-log-pdelay-req-interval for a
1348              for a PTP Port, but applicable to this Link Port.";
1349            reference
1350              "14.16.11 of IEEE Std 802.1AS 2020";
1351          }
1352
1353          leaf use-mgt-log-pdelay-req-interval {
1354            type boolean;
1355            description
1356              "This leaf is analogous to use-mgt-log-pdelay-req-interval for a
1357              for a PTP Port, but applicable to this Link Port.";
1358            reference
1359              "14.16.12 of IEEE Std 802.1AS 2020";
1360          }
1361
1362          leaf mgt-log-pdelay-req-interval {
1363            type int8;
1364            description
```

```
1365            "This leaf is analogous to mgt-log-pdelay-req-interval
1366 ──────── for a PTP
1367 _____   Port, but applicable to this Link Port.";
1368          reference
1369            "14.16.13 of IEEE Std 802.1AS─2020";
1370      }
1371
1372      leaf initial-compute-neighbor-rate-ratio {
1373        type int8boolean;
1374        description
1375          "This leaf is analogous to initial-compute-neighbor-rate-ratio
1376          for a PTP Port, but applicable to this Link Port.";
1377        reference
1378          "14.16.14 of IEEE Std 802.1AS─2020";
1379      }
1380
1381      leaf current-compute-neighbor-rate-ratio {
1382        type int8boolean;
1383        config false;
1384        description
1385          "This leaf is analogous to current-compute-neighbor-rate-ratio
1386          for a PTP Port, but applicable to this Link Port.";
1387        reference
1388          "14.16.15 of IEEE Std 802.1AS─2020";
1389      }
1390
1391      leaf use-mgt-compute-neighbor-rate-ratio {
1392        type boolean;
1393        description
1394          "This leaf is analogous to use-mgt-compute-neighbor-rate-ratio
1395          for a PTP Port, but applicable to this Link Port.";
1396        reference
1397          "14.16.16 of IEEE Std 802.1AS─2020";
1398      }
1399
1400      leaf mgt-compute-neighbor-rate-ratio {
1401        type int8boolean;
1402        description
1403          "This leaf is analogous to mgt-compute-neighbor-rate-ratio
1404 for a
1405           for a PTP Port, but applicable to this Link Port.";
1406        reference
1407          "14.16.17 of IEEE Std 802.1AS─2020";
1408      }
1409
1410      leaf initial-compute-mean-link-delay {
```

```
1411          type int8boolean;
1412          description
1413            "This leaf is analogous to initial-compute-mean-link-delay
1414    for a
1415              for a PTP Port, but applicable to this Link Port.";
1416          reference
1417            "14.16.18 of IEEE Std 802.1AS-2020";
1418        }
1419
1420      leaf current-compute-mean-link-delay {
1421        type int8boolean;
1422        config false;
1423        description
1424          "This leaf is analogous to current-compute-mean-link-delay for a
1425            for a PTP Port, but applicable to this Link Port.";
1426        reference
1427          "14.16.19 of IEEE Std 802.1AS-2020";
1428      }
1429
1430      leaf use-mgt-compute-mean-link-delay {
1431        type boolean;
1432        description
1433          "This leaf is analogous to use-mgt-compute-mean-link-delay for a
1434            for a PTP Port, but applicable to this Link Port.";
1435        reference
1436          "14.16.20 of IEEE Std 802.1AS-2020";
1437      }
1438
1439      leaf mgt-compute-mean-link-delay {
1440        type int8boolean;
1441        description
1442          "This leaf is analogous to mgt-compute-mean-link-delay
1443 ─────── for a PTP
1444 _____   Port, but applicable to this Link Port.";
1445        reference
1446          "14.16.21 of IEEE Std 802.1AS-2020";
1447      }
1448
1449      leaf allowed-lost-responses {
1450        type uint8;
1451        description
1452          "This leaf is analogous to allowed-lost-responses
1453 ─────── for a PTP Port,
1454 _____   but applicable to this Link Port.";
1455        reference
1456          "14.16.22 of IEEE Std 802.1AS-2020";
```

```
1457        }
1458
1459      leaf allowed-faults {
1460        type uint8;
1461        description
1462          "This leaf is analogous to allowed-faults
1463 ───────  for a PTP Port, but
1464 _____     applicable to this Link Port.";
1465        reference
1466          "14.16.23 of IEEE Std 802.1AS 2020";
1467      }
1468
1469      leaf-list pdelay-truncated-timestamps {
1470        type uint64 {
1471 ───────    range "0..281474976710655";
1472 ───────  }
1473 ───────  config falseeger48;
1474 _____    config false;
1475 _____    min-elements 4;
1476 _____    max-elements 4;
1477        description
1478          "This leaf is analogous to pdelay-truncated-timestamps
1479 ───────  for a PTP
1480 _____     Port, but applicable to this Link Port.";
1481        reference
1482          "14.16.25 of IEEE Std 802.1AS 2020";
1483      }
1484    }
1485
1486    augment
1487 ___  "/ptp-tt:ptp"+
1488 ____   "/ptp-tt:common-services"+
1489 ____   "/ptp-tt:cmlds"+
1490 ____   "/ptp-tt:ports"+
1491 ____   "/ptp-tt:port" {
1492      description
1493        "Augment to add port-statistics-ds to IEEE Std 1588 Link Port.";
1494
1495      container port-statistics-ds {
1496        description
1497          "This container is analogous to port-statistics-ds
1498 ───────  for a PTP
1499 _____     Port, but applicable to this Link Port.";
1500        reference
1501          "14.17 of IEEE Std 802.1AS 2020";
1502
```

```
1503        leaf rx-pdelay-req-count {
1504          type yang:counter32;
1505          config false;
1506          description
1507            "This leaf is analogous to rx-pdelay-req-count
1508            for a PTP Port,
1509            but applicable to this Link Port.";
1510          reference
1511            "14.17.2 of IEEE Std 802.1AS-2020";
1512        }
1513
1514        leaf rx-pdelay-resp-count {
1515          type yang:counter32;
1516          config false;
1517          description
1518            "This leaf is analogous to rx-pdelay-resp-count
1519            for a PTP Port,
1520            but applicable to this Link Port.";
1521          reference
1522            "14.17.3 of IEEE Std 802.1AS-2020";
1523        }
1524
1525        leaf rx-pdelay-resp-follow-up-count {
1526          type yang:counter32;
1527          config false;
1528          description
1529            "This leaf is analogous to rx-pdelay-resp-follow-up-count for a
1530            for a PTP Port, but applicable to this Link Port.";
1531          reference
1532            "14.17.4 of IEEE Std 802.1AS-2020";
1533        }
1534
1535        leaf rx-packet-discard-count {
1536          type yang:counter32;
1537          config false;
1538          description
1539            "This leaf is analogous to rx-packet-discard-count
1540            for a PTP
1541            Port, but applicable to this Link Port.";
1542          reference
1543            "14.17.5 of IEEE Std 802.1AS-2020";
1544        }
1545
1546        leaf pdelay-allowed-lost-exceeded-count {
1547          type yang:counter32;
1548          config false;
```

```
1549            description
1550              "This leaf is analogous to
1551              pdelay-allowed-lost-exceeded-count
1552              for a PTP Port, but applicable to this Link Port.";
1553            reference
1554              "14.17.6 of IEEE Std 802.1AS 2020";
1555          }
1556
1557          leaf tx-pdelay-req-count {
1558            type yang:counter32;
1559            config false;
1560            description
1561              "This leaf is analogous to tx-pdelay-req-count
1562              for a PTP Port,
1563              but applicable to this Link Port.";
1564            reference
1565              "14.17.7 of IEEE Std 802.1AS 2020";
1566          }
1567
1568          leaf tx-pdelay-resp-count {
1569            type yang:counter32;
1570            config false;
1571            description
1572              "This leaf is analogous to tx-pdelay-resp-count
1573              for a PTP Port,
1574              but applicable to this Link Port.";
1575            reference
1576              "14.17.8 of IEEE Std 802.1AS 2020";
1577          }
1578
1579          leaf tx-pdelay-resp-follow-up-count {
1580            type yang:counter32;
1581            config false;
1582            description
1583              "This leaf is analogous to tx-pdelay-resp-follow-up-count for a
1584              for a PTP Port, but applicable to this Link Port.";
1585            reference
1586              "14.17.9 of IEEE Std 802.1AS 2020";
1587          }
1588        }
1589      }
1590
1591    augment
1592      "/ptp-tt:ptp"+
1593      "/ptp-tt:common-services"+
1594      "/ptp-tt:cmlds"+
```

```
1595        "/ptp-tt:ports"+
1596        "/ptp-tt:port" {
1597          description
1598            "Augment to add asymmetry-measurement-mode-ds to
1599  ──────  IEEE Std 1588 Link
1600  ──────  Port.";
1601
1602          container asymmetry-measurement-mode-ds {
1603            description
1604              "This container is analogous to asymmetry-measurement-mode-ds for
1605              for a PTP Port, but applicable to this Link Port.";
1606            reference
1607              "14.18 of IEEE Std 802.1AS-2020";
1608
1609            leaf enabled {
1610              type boolean;
1611              description
1612                "This leaf is analogous to
1613                asymmetry-measurement-mode-ds.enabled
1614  ───────── for a PTP Port, but
1615  ─────────  applicable to this Link Port.";
1616            reference
1617              "14.13.2 of IEEE Std 802.1AS";
1618          }
1619        }
1620      }
1621  }
1622
```

Without change indications (for replacement)

```
1624  module ieee802-dot1as-gptp {
1625    yang-version "1.1";
1626    namespace urn:ieee:std:802.1AS:yang:ieee802-dot1as-gptp;
1627    prefix dot1as-gptp;
1628    import ietf-yang-types {
1629      prefix yang;
1630    }
1631    import ieee1588-ptp-tt {
1632      prefix ptp-tt;
1633    }
1634    organization
1635      "IEEE 802.1 Working Group";
1636    contact
1637      "WG-URL: http://ieee802.org/1/
1638      WG-EMail: stds-802-1-l@ieee.org
1639
```

```yang
1640        Contact: IEEE 802.1 Working Group Chair
1641                Postal: C/O IEEE 802.1 Working Group
1642                IEEE Standards Association
1643                445 Hoes Lane
1644                Piscataway, NJ 08854
1645                USA
1646
1647        E-mail: stds-802-1-chairs@ieee.org";
1648      description
1649        "Management objects that control timing and synchronization for time
1650        sensitive applications, as specified in IEEE Std 802.1AS.
1651
1652        Copyright (C) IEEE (2024). This version of this YANG module is part
1653        of IEEE Std 802.1AS; see the standard itself for full legal notices.";
1654      revision 2024-04-01 {
1655        description
1656          "Published as part of IEEE Std 802.1ASdn-2024. Initial version.";
1657        reference
1658          "IEEE Std 802.1AS - Timing and Synchronization for Time-Sensitive
1659          Applications: IEEE Std 802.1AS-2020, IEEE Std 802.1AS-2020/Cor
1660          1-2021, IEEE Std 802.1ASdr-2023, IEEE Std 802.1ASdn-2024. IEEE Std
1661          1588 - IEEE Standard for a Precision Clock Synchronization Protocol
1662          for Networked Measurement and Control Systems: IEEE Std 1588-2019,
1663          IEEE Std 1588e-2024.";
1664      }
1665      typedef scaled-ns {
1666        type string {
1667          pattern "[0-9A-F]{2}(-[0-9A-F]{2}){11}";
1668        }
1669        description
1670          "The IEEE Std 802.1AS ScaledNs type represents signed values of
1671          time and time interval in units of 2^16 ns, as a signed 96-bit
1672          integer. Each of the 12 octets is represented as a pair of
1673          hexadecimal characters, using uppercase for a letter. Octets are
1674          separated by a dash character. The most significant octet is first.";
1675        reference
1676          "6.4.3.1 of IEEE Std 802.1AS";
1677      }
1678      typedef uscaled-ns {
1679        type string {
1680          pattern "[0-9A-F]{2}(-[0-9A-F]{2}){11}";
1681        }
1682        description
1683          "The IEEE Std 802.1AS UScaledNs type represents unsigned values of
1684          time and time interval in units of 2^16 ns, as an unsigned 96-bit
1685          integer. Each of the 12 octets is represented as a pair of
```

```
1686          hexadecimal characters, using uppercase for a letter. Octets are
1687          separated by a dash character. The most significant octet is first.";
1688       reference
1689          "6.4.3.2 of IEEE Std 802.1AS
1690          3.4 of IEEE Std 754-2019";
1691    }
1692    typedef float64 {
1693       type string {
1694          pattern "[0-9A-F]{2}(-[0-9A-F]{2}){7}";
1695       }
1696       description
1697          "The IEEE Std 802.1AS Float64 type represents IEEE Std 754
1698          binary64. Each of the 8 octets is represented as a pair of
1699          hexadecimal characters, using uppercase for a letter. Octets are
1700          separated by a dash character. The most significant octet is first.";
1701       reference
1702          "6.4.2 of IEEE Std 802.1AS";
1703    }
1704    typedef uinteger48 {
1705       type uint64 {
1706          range "0..281474976710655";
1707       }
1708       description
1709          "48-bit unsigned integer data type.";
1710       reference
1711          "6.4.2 of IEEE Std 802.1AS";
1712    }
1713    augment
1714       "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:default-ds" {
1715       description
1716          "Augment IEEE Std 1588 defaultDS.";
1717       leaf gm-capable {
1718          type boolean;
1719          config false;
1720          description
1721             "The value is true if the time-aware system is capable of being a
1722             grandmaster, and false if the time-aware system is not capable of
1723             being a grandmaster.";
1724          reference
1725             "14.2.7 of IEEE Std 802.1AS";
1726       }
1727       leaf current-utc-offset {
1728          when
1729             "../current-utc-offset-valid='true'";
1730          type int16;
1731          config false;
```

```
1732          description
1733            "Offset from UTC (TAI - UTC). The offset is in units of seconds.
1734            This leaf applies to the ClockTimeTransmitter entity (i.e., local
1735            only, unrelated to a remote GM).";
1736          reference
1737            "14.2.8 of IEEE Std 802.1AS";
1738        }
1739        leaf current-utc-offset-valid {
1740          type boolean;
1741          config false;
1742          description
1743            "The value of current-utc-offset-valid shall be true if the value
1744            of current-utc-offset is known to be correct, otherwise it shall
1745            be false. This leaf applies to the ClockTimeTransmitter entity
1746            (i.e., local only, unrelated to a remote GM).";
1747          reference
1748            "14.2.9 of IEEE Std 802.1AS";
1749        }
1750        leaf leap59 {
1751          type boolean;
1752          config false;
1753          description
1754            "If the timescale is PTP, a true value for leap59 shall indicate
1755            that the last minute of the current UTC day contains 59 seconds.
1756            If the timescale is not PTP, the value shall be false. This leaf
1757            applies to the ClockTimeTransmitter entity (i.e., local only,
1758            unrelated to a remote GM).";
1759          reference
1760            "14.2.10 of IEEE Std 802.1AS";
1761        }
1762        leaf leap61 {
1763          type boolean;
1764          config false;
1765          description
1766            "If the timescale is PTP, a true value for leap61 shall indicate
1767            that the last minute of the current UTC day contains 61 seconds.
1768            If the timescale is not PTP, the value shall be false. This leaf
1769            applies to the ClockTimeTransmitter entity (i.e., local only,
1770            unrelated to a remote GM).";
1771          reference
1772            "14.2.11 of IEEE Std 802.1AS";
1773        }
1774        leaf time-traceable {
1775          type boolean;
1776          config false;
1777          description
```

```
1778              "The value of time-traceable shall be true if the timescale is
1779              traceable to a primary reference; otherwise, the value shall be
1780              false. This leaf applies to the ClockTimeTransmitter entity
1781              (i.e., local only, unrelated to a remote GM).";
1782          reference
1783              "14.2.12 of IEEE Std 802.1AS";
1784        }
1785        leaf frequency-traceable {
1786          type boolean;
1787          config false;
1788          description
1789              "The value of frequency-traceable shall be true if the frequency
1790              determining the timescale is traceable to a primary reference;
1791              otherwise, the value shall be false. This leaf applies to the
1792              ClockTimeTransmitter entity (i.e., local only, unrelated to a
1793              remote GM).";
1794          reference
1795              "14.2.13 of IEEE Std 802.1AS";
1796        }
1797        leaf ptp-timescale {
1798          type boolean;
1799          config false;
1800          description
1801              "If ptp-timescale is true, the timescale of the
1802              ClockTimeTransmitter entity is PTP, which is the elapsed time
1803              since the PTP epoch measured using the second defined by
1804              International Atomic Time (TAI). If ptp-timescale is false, the
1805              timescale of the ClockTimeTransmitter entity is ARB, which is the
1806              elapsed time since an arbitrary epoch. This leaf applies to the
1807              ClockTimeTransmitter entity (i.e., local only, unrelated to a
1808              remote GM).";
1809          reference
1810              "14.2.14 of IEEE Std 802.1AS";
1811        }
1812        leaf time-source {
1813          type identityref {
1814            base ptp-tt:time-source;
1815          }
1816          config false;
1817          description
1818              "The source of time used by the Grandmaster Clock This leaf
1819              applies to the ClockTimeTransmitter entity (i.e., local only,
1820              unrelated to a remote GM).";
1821          reference
1822              "14.2.15 of IEEE Std 802.1AS";
1823        }
```

```
1824        }
1825      augment
1826        "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:current-ds" {
1827        description
1828          "Augment IEEE Std 1588 currentDS.";
1829        leaf last-gm-phase-change {
1830          type scaled-ns;
1831          config false;
1832          description
1833            "Phase change that occurred on the most recent change in either
1834            the Grandmaster PTP Instance or gm-timebase-indicator leaf.";
1835          reference
1836            "14.3.4 of IEEE Std 802.1AS";
1837        }
1838        leaf last-gm-freq-change {
1839          type float64;
1840          config false;
1841          description
1842            "Frequency change that occurred on the most recent change in
1843            either the Grandmaster PTP Instance or gm-timebase-indicator
1844            leaf.";
1845          reference
1846            "14.3.5 of IEEE Std 802.1AS";
1847        }
1848        leaf gm-timebase-indicator {
1849          type uint16;
1850          config false;
1851          description
1852            "The timeBaseIndicator of the current Grandmaster PTP Instance.";
1853          reference
1854            "14.3.6 of IEEE Std 802.1AS";
1855        }
1856        leaf gm-change-count {
1857          type yang:counter32;
1858          config false;
1859          description
1860            "This statistics counter tracks the number of times the
1861            Grandmaster PTP Instance has changed in a gPTP domain.";
1862          reference
1863            "14.3.7 of IEEE Std 802.1AS";
1864        }
1865        leaf time-of-last-gm-change {
1866          type yang:timestamp;
1867          config false;
1868          description
1869            "System time when the most recent Grandmaster Clock change
```

```yang
1870              occurred in a gPTP domain. This leaf's type is YANG timestamp,
1871              which is based on system time. System time is an unsigned integer
1872              in units of 10 milliseconds, using an epoch defined by the
1873              implementation (typically time of boot-up).";
1874          reference
1875            "14.3.8 of IEEE Std 802.1AS";
1876        }
1877      leaf time-of-last-phase-change {
1878          type yang:timestamp;
1879          config false;
1880          description
1881            "System time when the most recent change in Grandmaster Clock
1882            phase occurred. This leaf's type is YANG timestamp, which is
1883            based on system time. System time is an unsigned integer in units
1884            of 10 milliseconds, using an epoch defined by the implementation
1885            (typically time of boot-up).";
1886          reference
1887            "14.3.9 of IEEE Std 802.1AS";
1888        }
1889      leaf time-of-last-freq-change {
1890          type yang:timestamp;
1891          config false;
1892          description
1893            "System time when the most recent change in Grandmaster Clock
1894            frequency occurred. This leaf's type is YANG timestamp, which is
1895            based on system time. System time is an unsigned integer in units
1896            of 10 milliseconds, using an epoch defined by the implementation
1897            (typically time of boot-up).";
1898          reference
1899            "14.3.10 of IEEE Std 802.1AS";
1900        }
1901      }
1902    augment "/ptp-tt:ptp/ptp-tt:instances/ptp-tt:instance/ptp-tt:parent-ds" {
1903      description
1904        "Augment IEEE Std 1588 parentDS.";
1905      leaf cumulative-rate-ratio {
1906        type int32;
1907        config false;
1908        description
1909          "Estimate of the ratio of the frequency of the Grandmaster Clock
1910          to the frequency of the LocalClock entity of this PTP Instance.
1911          cumulative-rate-ratio is expressed as the fractional frequency
1912          offset multiplied by 2^41, i.e., the quantity (rateRatio -
1913          1.0)(2^41).";
1914        reference
1915          "14.4.3 of IEEE Std 802.1AS";
```

```
1916        }
1917      }
1918    augment
1919      "/ptp-tt:ptp"+
1920      "/ptp-tt:instances"+
1921      "/ptp-tt:instance"+
1922      "/ptp-tt:ports"+
1923      "/ptp-tt:port"+
1924      "/ptp-tt:port-ds" {
1925      description
1926        "Augment IEEE Std 1588 portDS.
1927
1928        14.8.4 of IEEE Std 802.1AS specifies ptpPortEnabled
1929        (ptp-port-enabled), which is provided in YANG as the semantically
1930        equivalent node in ieee1588-ptp named port-enable (in port-ds).
1931
1932        14.8.15 of IEEE Std 802.1AS specifies
1933        mgtSettableLogAnnounceInterval (mgt-log-announce-interval), which
1934        is provided in YANG as the semantically equivalent node in
1935        ieee1588-ptp named log-announce-interval (in port-ds). In the
1936        context of IEEE Std 802.1AS, log-announce-interval cannot be used
1937        unless use-mgt-log-announce-interval is true.
1938
1939        14.8.20 of IEEE Std 802.1AS specifies mgtSettableLogSyncInterval
1940        (mgt-log-sync-interval), which is provided in YANG as the
1941        semantically equivalent node in ieee1588-ptp named
1942        log-sync-interval (in port-ds). In the context of IEEE Std 802.1AS,
1943        log-sync-interval cannot be used unless use-mgt-log-sync-interval
1944        is true.";
1945      leaf is-measuring-delay {
1946        type boolean;
1947        config false;
1948        description
1949          "Boolean that is true if the port is measuring PTP Link
1950          propagation delay.";
1951        reference
1952          "14.8.6 of IEEE Std 802.1AS";
1953      }
1954      leaf as-capable {
1955        type boolean;
1956        config false;
1957        description
1958          "Boolean that is true if and only if it is determined that this
1959          PTP Instance and the PTP Instance at the other end of the link
1960          attached to this port can interoperate with each other via the
1961          IEEE Std 802.1AS protocol.";
```

```
1962        reference
1963          "10.2.5.1 of IEEE Std 802.1AS
1964          14.8.7 of IEEE Std 802.1AS";
1965      }
1966    leaf mean-link-delay-thresh {
1967      type ptp-tt:time-interval;
1968      description
1969        "Propagation time threshold for mean-link-delay, above which a
1970        port is not considered capable of participating in the IEEE Std
1971        802.1AS protocol.";
1972      reference
1973        "14.8.9 of IEEE Std 802.1AS";
1974      }
1975    leaf neighbor-rate-ratio {
1976      type int32;
1977      config false;
1978      description
1979        "Estimate of the ratio of the frequency of the LocalClock entity
1980        of the PTP Instance at the other end of the link attached to this
1981        PTP Port, to the frequency of the LocalClock entity of this PTP
1982        Instance. neighbor-rate-ratio is expressed as the fractional
1983        frequency offset multiplied by 2^41, i.e., the quantity
1984        (rateRatio - 1.0)(2^41).";
1985      reference
1986        "14.8.11 of IEEE Std 802.1AS";
1987      }
1988    leaf initial-log-announce-interval {
1989      type int8;
1990      description
1991        "When use-mgt-log-announce-interval is false (i.e., change with
1992        Signaling message), this is the the logarithm to base 2 of the
1993        announce interval used when the port is initialized.";
1994      reference
1995        "14.8.12 of IEEE Std 802.1AS";
1996      }
1997    leaf current-log-announce-interval {
1998      type int8;
1999      config false;
2000      description
2001        "Logarithm to base 2 of the current announce interval.";
2002      reference
2003        "14.8.13 of IEEE Std 802.1AS";
2004      }
2005    leaf use-mgt-log-announce-interval {
2006      type boolean;
2007      description
```

```
2008              "Boolean that determines the source of the announce interval. If
2009               the value is true, the announce interval
2010               (current-log-announce-interval) is set equal to the value of
2011               mgt-log-announce-interval. If the value is false, the announce
2012               interval is determined by the AnnounceIntervalSetting state
2013               machine (i.e., changed with Signaling message).";
2014            reference
2015              "14.8.14 of IEEE Std 802.1AS";
2016          }
2017          leaf initial-log-sync-interval {
2018            type int8;
2019            description
2020              "When use-mgt-log-sync-interval is false (i.e., change with
2021               Signaling message), this is the the logarithm to base 2 of the
2022               sync interval used when the port is initialized.";
2023            reference
2024              "14.8.17 of IEEE Std 802.1AS";
2025          }
2026          leaf current-log-sync-interval {
2027            type int8;
2028            config false;
2029            description
2030              "Logarithm to base 2 of the current sync interval.";
2031            reference
2032              "14.8.18 of IEEE Std 802.1AS";
2033          }
2034          leaf use-mgt-log-sync-interval {
2035            type boolean;
2036            description
2037              "Boolean that determines the source of the sync interval. If the
2038               value is true, the sync interval (current-log-sync-interval) is
2039               set equal to the value of mgt-log-sync-interval. If the value is
2040               false, the sync interval is determined by the SyncIntervalSetting
2041               state machine (i.e., changed with Signaling message).";
2042            reference
2043              "14.8.19 of IEEE Std 802.1AS";
2044          }
2045          leaf sync-receipt-timeout {
2046            type uint8;
2047            description
2048              "Number of sync intervals that a timeReceiver port waits without
2049               receiving synchronization information, before assuming that the
2050               timeTransmitter is no longer transmitting synchronization
2051               information and that the BTCA needs to be run, if appropriate.";
2052            reference
2053              "14.8.21 of IEEE Std 802.1AS";
```

```
2054            }
2055        leaf sync-receipt-timeout-interval {
2056          type uscaled-ns;
2057          config false;
2058          description
2059            "Time interval after which sync receipt timeout occurs if
2060            time-synchronization information has not been received during the
2061            interval.";
2062          reference
2063            "14.8.22 of IEEE Std 802.1AS";
2064        }
2065        leaf initial-log-pdelay-req-interval {
2066          type int8;
2067          description
2068            "When use-mgt-log-pdelay-req-interval is false (i.e., change with
2069            Signaling message), this is the the logarithm to base 2 of the
2070            Pdelay_Req transmit interval used when the port is initialized.";
2071          reference
2072            "14.8.23 of IEEE Std 802.1AS";
2073        }
2074        leaf current-log-pdelay-req-interval {
2075          type int8;
2076          config false;
2077          description
2078            "Logarithm to base 2 of the current Pdelay_Req transmit interval.";
2079          reference
2080            "14.8.24 of IEEE Std 802.1AS";
2081        }
2082        leaf use-mgt-log-pdelay-req-interval {
2083          type boolean;
2084          description
2085            "Boolean that determines the source of the Pdelay_Req transmit
2086            interval. If the value is true, the Pdelay_Req transmit interval
2087            (current-log-pdelay-req-interval) is set equal to the value of
2088            mgt-log-pdelay-req-interval. If the value is false, the
2089            Pdelay_Req transmit interval is determined by the
2090            LinkDelayIntervalSetting state machine (i.e., changed with
2091            Signaling message).";
2092          reference
2093            "14.8.25 of IEEE Std 802.1AS";
2094        }
2095        leaf mgt-log-pdelay-req-interval {
2096          type int8;
2097          description
2098            "Logarithm to base 2 of the Pdelay_Req transmit interval, used if
2099            use-mgt-log-pdelay-req-interval is true. This value is not used
```

```
2100              if use-mgt-log-pdelay-req-interval is false.";
2101          reference
2102              "14.8.26 of IEEE Std 802.1AS";
2103        }
2104        leaf initial-log-gptp-cap-interval {
2105          type int8;
2106          description
2107              "When use-mgt-log-gptp-cap-interval is false (i.e., change with
2108              Signaling message), this is the the logarithm to base 2 of the
2109              gPTP capable message interval used when the port is initialized.";
2110          reference
2111              "14.8.27 of IEEE Std 802.1AS";
2112        }
2113        leaf current-log-gptp-cap-interval {
2114          type int8;
2115          config false;
2116          description
2117              "Logarithm to base 2 of the current gPTP capable message
2118              interval.";
2119          reference
2120              "14.8.28 of IEEE Std 802.1AS";
2121        }
2122        leaf use-mgt-log-gptp-cap-interval {
2123          type boolean;
2124          description
2125              "Boolean that determines the source of the gPTP capable message
2126              interval. If the value is true, the gPTP capable message interval
2127              (current-log-gptp-cap-interval) is set equal to the value of
2128              mgt-gptp-cap-req-interval. If the value is false, the gPTP
2129              capable message interval is determined by the
2130              GptpCapableMessageIntervalSetting state machine (i.e., changed
2131              with Signaling message).";
2132          reference
2133              "14.8.29 of IEEE Std 802.1AS";
2134        }
2135        leaf mgt-log-gptp-cap-interval {
2136          type int8;
2137          description
2138              "Logarithm to base 2 of the gPTP capable message interval, used
2139              if use-mgt-log-gptp-cap-interval is true. This value is not used
2140              if use-mgt-log-pdelay-req-interval is false.";
2141          reference
2142              "14.8.30 of IEEE Std 802.1AS";
2143        }
2144        leaf initial-compute-neighbor-rate-ratio {
2145          type boolean;
```

```
2146          description
2147            "When use-mgt-compute-neighbor-rate-ratio is false (i.e., change
2148            with Signaling message), this is the initial value of
2149            computeNeighborRateRatio.";
2150          reference
2151            "14.8.31 of IEEE Std 802.1AS";
2152        }
2153        leaf current-compute-neighbor-rate-ratio {
2154          type boolean;
2155          config false;
2156          description
2157            "Current value of computeNeighborRateRatio.";
2158          reference
2159            "14.8.32 of IEEE Std 802.1AS";
2160        }
2161        leaf use-mgt-compute-neighbor-rate-ratio {
2162          type boolean;
2163          description
2164            "Boolean that determines the source of computeNeighborRateRatio..
2165            If the value is true, computeNeighborRateRatio is set equal to
2166            the value of mgt-compute-neighbor-rate-ratio. If the value is
2167            false, computeNeighborRateRatio is determined by the
2168            LinkDelayIntervalSetting state machine (i.e., changed with
2169            Signaling message).";
2170          reference
2171            "14.8.33 of IEEE Std 802.1AS";
2172        }
2173        leaf mgt-compute-neighbor-rate-ratio {
2174          type boolean;
2175          description
2176            "Value of computeNeighborRateRatio, used if
2177            use-mgt-compute-neighbor-rate-ratio is true. This value is not
2178            used if use-mgt-compute-neighbor-rate-ratio is false.";
2179          reference
2180            "14.8.34 of IEEE Std 802.1AS";
2181        }
2182        leaf initial-compute-mean-link-delay {
2183          type boolean;
2184          description
2185            "When use-mgt-compute-mean-link-delay is false (i.e., change with
2186            Signaling message), this is the initial value of
2187            computeMeanLinkDelay.";
2188          reference
2189            "14.8.35 of IEEE Std 802.1AS";
2190        }
2191        leaf current-compute-mean-link-delay {
```

```
2192        type boolean;
2193        config false;
2194        description
2195          "Current value of computeMeanLinkDelay.";
2196        reference
2197          "14.8.36 of IEEE Std 802.1AS";
2198      }
2199     leaf use-mgt-compute-mean-link-delay {
2200        type boolean;
2201        description
2202          "Boolean that determines the source of computeMeanLinkDelay. If
2203          the value is true, computeMeanLinkDelay is set equal to the value
2204          of mgt-compute-mean-link-delay. If the value is false,
2205          computeMeanLinkDelay is determined by the
2206          LinkDelayIntervalSetting state machine (i.e., changed with
2207          Signaling message).";
2208        reference
2209          "14.8.37 of IEEE Std 802.1AS";
2210      }
2211     leaf mgt-compute-mean-link-delay {
2212        type boolean;
2213        description
2214          "Value of computeMeanLinkDelay, used if
2215          use-mgt-compute-mean-link-delay is true. This value is not used
2216          if use-mgt-compute-mean-link-delay is false.";
2217        reference
2218          "14.8.38 of IEEE Std 802.1AS";
2219      }
2220     leaf allowed-lost-responses {
2221        type uint8;
2222        description
2223          "Number of Pdelay_Req messages for which a valid response is not
2224          received, above which a port is considered to not be exchanging
2225          peer delay messages with its neighbor.";
2226        reference
2227          "14.8.39 of IEEE Std 802.1AS";
2228      }
2229     leaf allowed-faults {
2230        type uint8;
2231        description
2232          "Number of faults above which asCapable is set to false.";
2233        reference
2234          "14.8.40 of IEEE Std 802.1AS";
2235      }
2236     leaf gptp-cap-receipt-timeout {
2237        type uint8;
```

```
2238          description
2239            "Number of transmission intervals that a port waits without
2240            receiving the gPTP capable TLV, before assuming that the neighbor
2241            port is no longer invoking the gPTP protocol.";
2242          reference
2243            "14.8.41 of IEEE Std 802.1AS";
2244        }
2245        leaf nup {
2246          type float64;
2247          description
2248            "For an OLT port of an IEEE Std 802.3 EPON link, this value is
2249            the effective index of refraction for the EPON upstream
2250            wavelength light of the optical path";
2251          reference
2252            "14.8.43 of IEEE Std 802.1AS";
2253        }
2254        leaf ndown {
2255          type float64;
2256          description
2257            "For an OLT port of an IEEE 802.3 EPON link, this value is the
2258            effective index of refraction for the EPON downstream wavelength
2259            light of the optical path";
2260          reference
2261            "14.8.44 of IEEE Std 802.1AS";
2262        }
2263        leaf one-step-tx-oper {
2264          type boolean;
2265          config false;
2266          description
2267            "This value is true if the port is sending one-step Sync
2268            messages, and false if the port is sending two-step Sync and
2269            Follow-Up messages.";
2270          reference
2271            "14.8.45 of IEEE Std 802.1AS";
2272        }
2273        leaf one-step-receive {
2274          type boolean;
2275          config false;
2276          description
2277            "This value is true if the port is capable of receiving and
2278            processing one-step Sync messages.";
2279          reference
2280            "14.8.46 of IEEE Std 802.1AS";
2281        }
2282        leaf one-step-transmit {
2283          type boolean;
```

```
2284            config false;
2285            description
2286              "This value is true if the port is capable of transmitting
2287              one-step Sync messages.";
2288            reference
2289              "14.8.47 of IEEE Std 802.1AS";
2290          }
2291          leaf initial-one-step-tx-oper {
2292            type boolean;
2293            description
2294              "When use-mgt-one-step-tx-oper is false (i.e., change with
2295              Signaling message), this is the initial value of
2296              current-one-step-tx-oper.";
2297            reference
2298              "14.8.48 of IEEE Std 802.1AS";
2299          }
2300          leaf current-one-step-tx-oper {
2301            type boolean;
2302            config false;
2303            description
2304              "This value is true if the port is configured to transmit
2305              one-step Sync messages, either via management
2306              (mgt-one-step-tx-oper) or Signaling. If both
2307              current-one-step-tx-oper and one-step-transmit are true, the port
2308              transmits one-step Sync messages (i.e., one-step-tx-oper true).";
2309            reference
2310              "14.8.49 of IEEE Std 802.1AS";
2311          }
2312          leaf use-mgt-one-step-tx-oper {
2313            type boolean;
2314            description
2315              "Boolean that determines the source of current-one-step-tx-oper.
2316              If the value is true, current-one-step-tx-oper is set equal to
2317              the value of mgt-one-step-tx-oper. If the value is false,
2318              current-one-step-tx-oper is determined by the
2319              OneStepTxOperSetting state machine (i.e., changed with Signaling
2320              message).";
2321            reference
2322              "14.8.50 of IEEE Std 802.1AS";
2323          }
2324          leaf mgt-one-step-tx-oper {
2325            type boolean;
2326            description
2327              "If use-mgt-one-step-tx-oper is true, current-one-step-tx-oper is
2328              set equal to this value. This value is not used if
2329              use-mgt-one-step-tx-oper is false.";
```

```
2330          reference
2331            "14.8.51 of IEEE Std 802.1AS";
2332        }
2333      leaf sync-locked {
2334        type boolean;
2335        config false;
2336        description
2337          "This value is true if the port will transmit a Sync as soon as
2338          possible after the timeReceiver port receives a Sync message.";
2339        reference
2340          "14.8.52 of IEEE Std 802.1AS";
2341      }
2342      leaf-list pdelay-truncated-timestamps {
2343        type uinteger48;
2344        config false;
2345        min-elements 4;
2346        max-elements 4;
2347        description
2348          "For full-duplex IEEE Std 802.3 media, and CSN media that use the
2349          peer-to-peer delay mechanism to measure path delay, the values of
2350          the four elements of this leaf-list correspond to the timestamps
2351          t1, t2, t3, and t4, listed in that order. Each timestamp is
2352          expressed in units of 2^-16 ns (i.e., the value of each array
2353          element is equal to the remainder obtained upon dividing the
2354          respective timestamp, expressed in units of 2^-16 ns, by 2^48).
2355          At any given time, the timestamp values stored in the array are
2356          for the same, and most recently completed, peer delay message
2357          exchange. For each timestamp, only 48-bits are valid (the upper
2358          16-bits are always zero).";
2359        reference
2360          "14.8.53 of IEEE Std 802.1AS";
2361      }
2362    }
2363    augment
2364      "/ptp-tt:ptp"+
2365      "/ptp-tt:instances"+
2366      "/ptp-tt:instance"+
2367      "/ptp-tt:ports"+
2368      "/ptp-tt:port" {
2369      description
2370        "Augment to add port-statistics-ds to IEEE Std 1588 PTP Port.";
2371      container port-statistics-ds {
2372        description
2373          "Provides counters associated with the port of the PTP Instance.";
2374        reference
2375          "14.10 of IEEE Std 802.1AS";
```

```
2376          leaf rx-sync-count {
2377            type yang:counter32;
2378            config false;
2379            description
2380              "Counter that increments every time synchronization information
2381              is received.";
2382            reference
2383              "14.10.2 of IEEE Std 802.1AS";
2384          }
2385          leaf rx-one-step-sync-count {
2386            type yang:counter32;
2387            config false;
2388            description
2389              "Counter that increments every time a one-step Sync message is
2390              received.";
2391            reference
2392              "14.10.3 of IEEE Std 802.1AS";
2393          }
2394          leaf rx-follow-up-count {
2395            type yang:counter32;
2396            config false;
2397            description
2398              "Counter that increments every time a Follow_Up message is
2399              received.";
2400            reference
2401              "14.10.4 of IEEE Std 802.1AS";
2402          }
2403          leaf rx-pdelay-req-count {
2404            type yang:counter32;
2405            config false;
2406            description
2407              "Counter that increments every time a Pdelay_Req message is
2408              received.";
2409            reference
2410              "14.10.5 of IEEE Std 802.1AS";
2411          }
2412          leaf rx-pdelay-resp-count {
2413            type yang:counter32;
2414            config false;
2415            description
2416              "Counter that increments every time a Pdelay_Resp message is
2417              received.";
2418            reference
2419              "14.10.6 of IEEE Std 802.1AS";
2420          }
2421          leaf rx-pdelay-resp-follow-up-count {
```

```
2422          type yang:counter32;
2423          config false;
2424          description
2425            "Counter that increments every time a Pdelay_Resp_Follow_Up
2426            message is received.";
2427          reference
2428            "14.10.7 of IEEE Std 802.1AS";
2429        }
2430        leaf rx-announce-count {
2431          type yang:counter32;
2432          config false;
2433          description
2434            "Counter that increments every time an Announce message is
2435            received.";
2436          reference
2437            "14.10.8 of IEEE Std 802.1AS";
2438        }
2439        leaf rx-packet-discard-count {
2440          type yang:counter32;
2441          config false;
2442          description
2443            "Counter that increments every time a PTP message of the
2444            respective PTP Instance is discarded.";
2445          reference
2446            "14.10.9 of IEEE Std 802.1AS";
2447        }
2448        leaf sync-receipt-timeout-count {
2449          type yang:counter32;
2450          config false;
2451          description
2452            "Counter that increments every time a sync receipt timeout
2453            occurs.";
2454          reference
2455            "14.10.10 of IEEE Std 802.1AS";
2456        }
2457        leaf announce-receipt-timeout-count {
2458          type yang:counter32;
2459          config false;
2460          description
2461            "Counter that increments every time an announce receipt timeout
2462            occurs.";
2463          reference
2464            "14.10.11 of IEEE Std 802.1AS";
2465        }
2466        leaf pdelay-allowed-lost-exceeded-count {
2467          type yang:counter32;
```

```
2468            config false;
2469            description
2470              "Counter that increments every time the value of the variable
2471              lostResponses exceeds the value of the variable
2472              allowedLostResponses, in the RESET state of the MDPdelayReq
2473              state machine.";
2474            reference
2475              "14.10.12 of IEEE Std 802.1AS";
2476          }
2477          leaf tx-sync-count {
2478            type yang:counter32;
2479            config false;
2480            description
2481              "Counter that increments every time synchronization information
2482              is transmitted.";
2483            reference
2484              "14.10.13 of IEEE Std 802.1AS";
2485          }
2486          leaf tx-one-step-sync-count {
2487            type yang:counter32;
2488            config false;
2489            description
2490              "Counter that increments every time a one-step Sync message is
2491              transmitted.";
2492            reference
2493              "14.10.14 of IEEE Std 802.1AS";
2494          }
2495          leaf tx-follow-up-count {
2496            type yang:counter32;
2497            config false;
2498            description
2499              "Counter that increments every time a Follow_Up message is
2500              transmitted.";
2501            reference
2502              "14.10.15 of IEEE Std 802.1AS";
2503          }
2504          leaf tx-pdelay-req-count {
2505            type yang:counter32;
2506            config false;
2507            description
2508              "Counter that increments every time a Pdelay_Req message is
2509              transmitted.";
2510            reference
2511              "14.10.16 of IEEE Std 802.1AS";
2512          }
2513          leaf tx-pdelay-resp-count {
```

```
2514          type yang:counter32;
2515          config false;
2516          description
2517            "Counter that increments every time a Pdelay_Resp message is
2518            transmitted.";
2519          reference
2520            "14.10.17 of IEEE Std 802.1AS";
2521        }
2522      leaf tx-pdelay-resp-follow-up-count {
2523          type yang:counter32;
2524          config false;
2525          description
2526            "Counter that increments every time a Pdelay_Resp_Follow_Up
2527            message is transmitted.";
2528          reference
2529            "14.10.18 of IEEE Std 802.1AS";
2530        }
2531      leaf tx-announce-count {
2532          type yang:counter32;
2533          config false;
2534          description
2535            "Counter that increments every time an Announce message is
2536            transmitted.";
2537          reference
2538            "14.10.19 of IEEE Std 802.1AS";
2539        }
2540      }
2541    }
2542  augment
2543    "/ptp-tt:ptp"+
2544    "/ptp-tt:instances"+
2545    "/ptp-tt:instance"+
2546    "/ptp-tt:ports"+
2547    "/ptp-tt:port" {
2548    description
2549      "Augment to add asymmetry-measurement-mode-ds to IEEE Std 1588 PTP
2550      Port.";
2551    container asymmetry-measurement-mode-ds {
2552      description
2553        "Represents the capability to enable/disable the Asymmetry
2554        Compensation Measurement Procedure on a PTP Port. This data set
2555        is used instead of the CMLDS asymmetry-measurement-mode-ds when
2556        only a single PTP Instance is present (i.e., CMLDS is not used).";
2557      reference
2558        "14.13 of IEEE Std 802.1AS
2559        Annex G of IEEE Std 802.1AS";
```

```
2560        leaf enabled {
2561          type boolean;
2562          description
2563            "For full-duplex IEEE Std 802.3 media, the value is true if an
2564            asymmetry measurement is being performed for the link attached
2565            to this PTP Port, and false otherwise. For all other media, the
2566            value shall be false.";
2567        }
2568      }
2569    }
2570    augment
2571      "/ptp-tt:ptp"+
2572      "/ptp-tt:common-services"+
2573      "/ptp-tt:cmlds"+
2574      "/ptp-tt:ports"+
2575      "/ptp-tt:port"+
2576      "/ptp-tt:link-port-ds" {
2577      description
2578        "Augment IEEE Std 1588 cmldsLinkPortDS.
2579
2580        14.16.9 of IEEE Std 802.1AS specifies neighborRateRatio
2581        (neighbor-rate-ratio), which is provided in YANG as the
2582        semantically equivalent node in ieee1588-ptp named
2583        scaled-neighbor-rate-ratio (in link-port-ds).";
2584      leaf cmlds-link-port-enabled {
2585        type boolean;
2586        config false;
2587        description
2588          "Boolean that is true if both delay-mechanism is common-p2p and
2589          the value of ptp-port-enabled is true, for at least one PTP Port
2590          that uses the CMLDS; otherwise, the value is false.";
2591        reference
2592          "11.2.18.1 of IEEE Std 802.1AS
2593          14.16.3 of IEEE Std 802.1AS";
2594      }
2595      leaf is-measuring-delay {
2596        type boolean;
2597        config false;
2598        description
2599          "This leaf is analogous to is-measuring-delay for a PTP Port, but
2600          applicable to this Link Port.";
2601        reference
2602          "14.16.4 of IEEE Std 802.1AS";
2603      }
2604      leaf as-capable-across-domains {
2605        type boolean;
```

```
2606          config false;
2607          description
2608            "This leaf is true when all PTP Instances (domains) for this Link
2609            Port detect proper exchange of Pdelay messages.";
2610          reference
2611            "11.2.2 of IEEE Std 802.1AS
2612            14.16.5 of IEEE Std 802.1AS";
2613        }
2614        leaf mean-link-delay-thresh {
2615          type ptp-tt:time-interval;
2616          description
2617            "Propagation time threshold for mean-link-delay, above which a
2618            Link Port is not considered capable of participating in the IEEE
2619            Std 802.1AS protocol.";
2620          reference
2621            "14.16.7 of IEEE Std 802.1AS";
2622        }
2623        leaf initial-log-pdelay-req-interval {
2624          type int8;
2625          description
2626            "This leaf is analogous to initial-log-pdelay-req-interval for a
2627            PTP Port, but applicable to this Link Port.";
2628          reference
2629            "14.16.10 of IEEE Std 802.1AS";
2630        }
2631        leaf current-log-pdelay-req-interval {
2632          type int8;
2633          config false;
2634          description
2635            "This leaf is analogous to current-log-pdelay-req-interval for a
2636            PTP Port, but applicable to this Link Port.";
2637          reference
2638            "14.16.11 of IEEE Std 802.1AS";
2639        }
2640        leaf use-mgt-log-pdelay-req-interval {
2641          type boolean;
2642          description
2643            "This leaf is analogous to use-mgt-log-pdelay-req-interval for a
2644            PTP Port, but applicable to this Link Port.";
2645          reference
2646            "14.16.12 of IEEE Std 802.1AS";
2647        }
2648        leaf mgt-log-pdelay-req-interval {
2649          type int8;
2650          description
2651            "This leaf is analogous to mgt-log-pdelay-req-interval for a PTP
```

```
2652              Port, but applicable to this Link Port.";
2653            reference
2654              "14.16.13 of IEEE Std 802.1AS";
2655          }
2656          leaf initial-compute-neighbor-rate-ratio {
2657            type boolean;
2658            description
2659              "This leaf is analogous to initial-compute-neighbor-rate-ratio
2660              for a PTP Port, but applicable to this Link Port.";
2661            reference
2662              "14.16.14 of IEEE Std 802.1AS";
2663          }
2664          leaf current-compute-neighbor-rate-ratio {
2665            type boolean;
2666            config false;
2667            description
2668              "This leaf is analogous to current-compute-neighbor-rate-ratio
2669              for a PTP Port, but applicable to this Link Port.";
2670            reference
2671              "14.16.15 of IEEE Std 802.1AS";
2672          }
2673          leaf use-mgt-compute-neighbor-rate-ratio {
2674            type boolean;
2675            description
2676              "This leaf is analogous to use-mgt-compute-neighbor-rate-ratio
2677              for a PTP Port, but applicable to this Link Port.";
2678            reference
2679              "14.16.16 of IEEE Std 802.1AS";
2680          }
2681          leaf mgt-compute-neighbor-rate-ratio {
2682            type boolean;
2683            description
2684              "This leaf is analogous to mgt-compute-neighbor-rate-ratio for a
2685              PTP Port, but applicable to this Link Port.";
2686            reference
2687              "14.16.17 of IEEE Std 802.1AS";
2688          }
2689          leaf initial-compute-mean-link-delay {
2690            type boolean;
2691            description
2692              "This leaf is analogous to initial-compute-mean-link-delay for a
2693              PTP Port, but applicable to this Link Port.";
2694            reference
2695              "14.16.18 of IEEE Std 802.1AS";
2696          }
2697          leaf current-compute-mean-link-delay {
```

```
2698              type boolean;
2699              config false;
2700              description
2701                "This leaf is analogous to current-compute-mean-link-delay for a
2702                PTP Port, but applicable to this Link Port.";
2703              reference
2704                "14.16.19 of IEEE Std 802.1AS";
2705            }
2706            leaf use-mgt-compute-mean-link-delay {
2707              type boolean;
2708              description
2709                "This leaf is analogous to use-mgt-compute-mean-link-delay for a
2710                PTP Port, but applicable to this Link Port.";
2711              reference
2712                "14.16.20 of IEEE Std 802.1AS";
2713            }
2714            leaf mgt-compute-mean-link-delay {
2715              type boolean;
2716              description
2717                "This leaf is analogous to mgt-compute-mean-link-delay for a PTP
2718                Port, but applicable to this Link Port.";
2719              reference
2720                "14.16.21 of IEEE Std 802.1AS";
2721            }
2722            leaf allowed-lost-responses {
2723              type uint8;
2724              description
2725                "This leaf is analogous to allowed-lost-responses for a PTP Port,
2726                but applicable to this Link Port.";
2727              reference
2728                "14.16.22 of IEEE Std 802.1AS";
2729            }
2730            leaf allowed-faults {
2731              type uint8;
2732              description
2733                "This leaf is analogous to allowed-faults for a PTP Port, but
2734                applicable to this Link Port.";
2735              reference
2736                "14.16.23 of IEEE Std 802.1AS";
2737            }
2738            leaf-list pdelay-truncated-timestamps {
2739              type uinteger48;
2740              config false;
2741              min-elements 4;
2742              max-elements 4;
2743              description
```

```
2744            "This leaf is analogous to pdelay-truncated-timestamps for a PTP
2745            Port, but applicable to this Link Port.";
2746          reference
2747            "14.16.25 of IEEE Std 802.1AS";
2748        }
2749      }
2750    augment
2751      "/ptp-tt:ptp"+
2752      "/ptp-tt:common-services"+
2753      "/ptp-tt:cmlds"+
2754      "/ptp-tt:ports"+
2755      "/ptp-tt:port" {
2756      description
2757        "Augment to add port-statistics-ds to IEEE Std 1588 Link Port.";
2758      container port-statistics-ds {
2759        description
2760          "This container is analogous to port-statistics-ds for a PTP
2761          Port, but applicable to this Link Port.";
2762        reference
2763          "14.17 of IEEE Std 802.1AS";
2764        leaf rx-pdelay-req-count {
2765          type yang:counter32;
2766          config false;
2767          description
2768            "This leaf is analogous to rx-pdelay-req-count for a PTP Port,
2769            but applicable to this Link Port.";
2770          reference
2771            "14.17.2 of IEEE Std 802.1AS";
2772        }
2773        leaf rx-pdelay-resp-count {
2774          type yang:counter32;
2775          config false;
2776          description
2777            "This leaf is analogous to rx-pdelay-resp-count for a PTP Port,
2778            but applicable to this Link Port.";
2779          reference
2780            "14.17.3 of IEEE Std 802.1AS";
2781        }
2782        leaf rx-pdelay-resp-follow-up-count {
2783          type yang:counter32;
2784          config false;
2785          description
2786            "This leaf is analogous to rx-pdelay-resp-follow-up-count for a
2787            PTP Port, but applicable to this Link Port.";
2788          reference
2789            "14.17.4 of IEEE Std 802.1AS";
```

```
2790              }
2791          leaf rx-packet-discard-count {
2792            type yang:counter32;
2793            config false;
2794            description
2795              "This leaf is analogous to rx-packet-discard-count for a PTP
2796              Port, but applicable to this Link Port.";
2797            reference
2798              "14.17.5 of IEEE Std 802.1AS";
2799          }
2800          leaf pdelay-allowed-lost-exceeded-count {
2801            type yang:counter32;
2802            config false;
2803            description
2804              "This leaf is analogous to pdelay-allowed-lost-exceeded-count
2805              for a PTP Port, but applicable to this Link Port.";
2806            reference
2807              "14.17.6 of IEEE Std 802.1AS";
2808          }
2809          leaf tx-pdelay-req-count {
2810            type yang:counter32;
2811            config false;
2812            description
2813              "This leaf is analogous to tx-pdelay-req-count for a PTP Port,
2814              but applicable to this Link Port.";
2815            reference
2816              "14.17.7 of IEEE Std 802.1AS";
2817          }
2818          leaf tx-pdelay-resp-count {
2819            type yang:counter32;
2820            config false;
2821            description
2822              "This leaf is analogous to tx-pdelay-resp-count for a PTP Port,
2823              but applicable to this Link Port.";
2824            reference
2825              "14.17.8 of IEEE Std 802.1AS";
2826          }
2827          leaf tx-pdelay-resp-follow-up-count {
2828            type yang:counter32;
2829            config false;
2830            description
2831              "This leaf is analogous to tx-pdelay-resp-follow-up-count for a
2832              PTP Port, but applicable to this Link Port.";
2833            reference
2834              "14.17.9 of IEEE Std 802.1AS";
2835          }
```

```
2836         }
2837      }
2838    augment
2839      "/ptp-tt:ptp"+
2840      "/ptp-tt:common-services"+
2841      "/ptp-tt:cmlds"+
2842      "/ptp-tt:ports"+
2843      "/ptp-tt:port" {
2844      description
2845        "Augment to add asymmetry-measurement-mode-ds to IEEE Std 1588 Link
2846        Port.";
2847      container asymmetry-measurement-mode-ds {
2848        description
2849          "This container is analogous to asymmetry-measurement-mode-ds for
2850          a PTP Port, but applicable to this Link Port.";
2851        reference
2852          "14.18 of IEEE Std 802.1AS";
2853        leaf enabled {
2854          type boolean;
2855          description
2856            "This leaf is analogous to
2857            asymmetry-measurement-mode-ds.enabled for a PTP Port, but
2858            applicable to this Link Port.";
2859          reference
2860            "14.13.2 of IEEE Std 802.1AS";
2861        }
2862      }
2863    }
2864  }
```