

# Kupní smlouva

## I. Smluvní strany

### **Masarykův onkologický ústav**

se sídlem Žlutý kopec 7, 656 53 Brno  
zastoupený prof. MUDr. Janem Žaloudíkem, CSc., ředitelem  
IČ: 00209805, DIČ: CZ00209805  
Bankovní spojení: Česká národní banka, č. ú.: 87535621/0710  
(dále jen „kupující“)

a

### **Elekta Services s.r.o.**

se sídlem Pražákova 1000/60, 619 00 Brno  
zastoupená Ing. Pavlem Tobiášem, Ph.D., MBA, jednatelem  
IČ: 29280095, DIČ: CZ29280095  
Bankovní spojení: ~~xxxxxxxxxx~~  
zapsaná v obchodním rejstříku vedeném Krajským soudem v Brně, oddíl C, vložka 70591  
(dále jen „prodávající“)

na základě vítězství zhotovitele ve veřejné zakázce *Brachyterapeutický systém (BRT zařízení)* zadávané objednatelem v souladu se zákonem č. 137/2006 Sb., o veřejných zakázkách, ve znění pozdějších předpisů, uzavírají tuto kupní smlouvu.

## II. Předmět smlouvy

- 1) Touto smlouvou se prodávající zavazuje dodat kupujícímu nový, dosud nepoužitý Brachyterapeutický systém Flexitron vč. příslušenství (dále jen „zařízení“), dle specifikace uvedené v příloze č. 1 této smlouvy a převést na kupujícího vlastnické právo k zařízení.
- 2) Touto smlouvou se prodávající dále zavazuje k:
  - instalaci a uvedení zařízení do provozu,
  - připojení k datové síti PACS dle DICOM Conformance Statement kupujícího (příloha č. 3 této smlouvy),
  - zajištění provedení přijímací zkoušky dle vyhlášky č. 422/2016 Sb., o radiační ochraně a zabezpečení radionuklidového zdroje, ve znění pozdějších předpisů,
  - dodávce 1 ks radionuklidového zdroje o minimální aktivitě 370 GBq kompatibilního se zařízením,
  - provedení instruktáže ve smyslu zákona č. 268/2014 Sb., ve znění pozdějších předpisů, v rozsahu minimálně 5 pracovních dní, a to v českém jazyce v sídle kupujícího,
  - dodání podkladů potřebných pro provoz zařízení, zejména uživatelských manuálů (návod k obsluze) v českém jazyce (v tištěné i elektronické podobě) a technických manuálů v češtině nebo v angličtině,
  - dodání dokladů osvědčujících způsobilost dodávky k účelu užívání v České republice,
  - dodání prohlášení o shodě dle zákona č. 22/1997 Sb., o technických požadavcích na výrobky a o změně a doplnění některých zákonů, ve znění pozdějších předpisů (neobsahuje-li prohlášení o shodě zařazení do klasifikační třídy, doloží uchazeč současně i prohlášení o zařazení do příslušné klasifikační třídy, popř. doloží kopii rovnocenných dokladů vydaných v členském státě EU včetně překladu do českého jazyka),
  - provádění odborné údržby ve smyslu zákona č. 268/2014 Sb. po celou záruční dobu,
  - provádění upgrade a update software zařízení.
- 3) Technická specifikace dodaného zařízení je uvedena v příloze č. 1 této smlouvy, která tvoří její nedílnou součást. Soupis jednotlivých prvků (souborů movitých věcí, které jsou součástí dodávky), včetně uvedených jednotkových cen a množství je uveden v příloze č. 2 této smlouvy.

- 4) Předmětem této smlouvy je dále závazek kupujícího řádně a včas uskutečnenou dodávku převzít a zaplatit za ni dohodnutou cenu.

### III. Práva a povinnosti kupujícího

- 1) Kupující je povinen umožnit přístup pověřenému zaměstnanci prodávajícího do prostor určeného objektu za účelem dodání zařízení a provedení souvisejících činností.
- 2) Pro případ provádění údržby vzdáleným přístupem se prodávající zavazuje s kupujícím uzavřít smlouvu o vzdáleném přístupu.

### IV. Kupní cena a platební podmínky

- 1) Celková kupní cena za dodávku zařízení a za další činnosti související s dodávkou zařízení činí:

Celková kupní cena bez DPH: 8.322.000 Kč

DPH 21 %: 1.747.620 Kč

**Celková kupní cena včetně DPH: 10.069.620 Kč**

- 2) Kupní cena je stanovena jako konečná, pevná a nepřekročitelná. Kupní cena může být změněna pouze v případě změny sazby daně z přidané hodnoty. V takovém případě se složka kupní ceny, která tvoří daň z přidané hodnoty, upraví v souladu s právními předpisy.
- 3) Kupní cena zahrnuje veškeré náklady související s dodávkou zařízení, včetně odvozu a likvidace obalů a dalších materiálů, veškerých organizačních a koordinačních činností, manipulace se zařízením, pojištění dodávky apod.
- 4) Kupní cena zařízení bude uhrazena po protokolárním předání a převzetí zařízení, a to na základě daňového dokladu (faktury) vystaveného prodávajícím po předání a převzetí zařízení kupujícím, se splatností do 30 dnů ode dne doručení daňového dokladu kupujícím.
- 5) Daňový doklad musí být v souladu s platnými právními předpisy, zejména se zákonem č. 235/2004 Sb., o dani z přidané hodnoty, v platném znění. V případě, že daňový doklad nebude obsahovat náležitosti dle platných právních předpisů, popř. bude obsahovat jiné chyby či nedostatky, je kupující oprávněn takový daňový doklad vrátit, přičemž nová lhůta splatnosti počíná běžet dnem doručení opraveného daňového dokladu kupujícím.
- 6) Na daňovém dokladu bude uveden název veřejné zakázky: *Brachyterapeutický systém (BRT zařízení)* a evidenční číslo veřejné zakázky: Z2017-006697.

### V. Doba a místo dodání

- 1) Prodávající se zavazuje dodat a zprovoznit zařízení v rozsahu uvedeném v této smlouvě a provést instruktáž zaměstnanců kupujícího do 60 dnů od uzavření smlouvy.
- 2) Zařízení bude dodáno na Kliniku radiační onkologie Masarykova onkologického ústavu (Žlutý kopec 7, 656 53 Brno).

### VI. Předání a převzetí zařízení

- 1) Prodávající se zavazuje nahlásit minimálně tři dny předem předpokládaný termín dodání a zprovoznění zařízení, a to ~~xxxxxxxxxx~~, tel.: ~~xxxxxxxxxx~~, e-mail: ~~xxxxxxxxxx~~, a ~~xxxxxxxxxx~~, tel.: ~~xxxxxxxxxx~~, e-mail: ~~xxxxxxxxxx~~.
- 2) Kupující je oprávněn přizvat k předání a převzetí zařízení i jiné osoby, jejichž účast pokládá za nezbytnou.
- 3) O průběhu předávacího a převjímacího řízení pořídí prodávající zápis (protokol), jehož povinnými údaji jsou:
  - údaje o smluvních stranách,
  - popis zařízení,
  - případné výhrady kupujícího k zařízení,
  - případné odůvodnění, proč kupující zařízení nepřevzal,
  - potvrzení o provedení instruktáže,
  - prohlášení kupujícího, zda dodávku přijímá nebo nepřijímá.

- 4) Kupující je povinen převzít zařízení, které je dodáno řádně, tj. které vykazuje všechny vlastnosti a vyhovuje všem podmínkám uvedeným v této smlouvě či stanoveným kupujícím nebo právními předpisy a technickými normami, a které je dodáno včas.
- 5) Kupující není povinen převzít zařízení zejména v následujících případech:
  - zařízení vykazuje známky poškození,
  - zařízení vykazuje vady, které brání jeho řádnému užívání,
  - prodávající spolu s dodáním zařízení nepředal kupujícímu veškerou dokumentaci k zařízení v souladu s touto smlouvou,
  - zařízení není dodáno v termínu uvedeném v této smlouvě,
  - prodávající neprovedl instruktáž.
- 6) Náklady na případný odvoz zařízení (včetně balného), které kupující v souladu s touto smlouvou nepřevzal, nese prodávající.
- 7) Kupující je oprávněn převzít i takové zařízení, která vykazuje vady, které nebrání jeho řádnému užívání. Tyto vady se vyznačí v protokolu při převjímacím řízení.
- 8) Zařízení se považuje za předané a převzaté dnem podpisu předávacího protokolu kupujícím, ze kterého vyplývá, že kupující zařízení přebírá.

#### **VII. Nebezpečí škody na zařízení, přechod vlastnického práva**

- 1) Okamžikem předání a převzetí zařízení kupujícím přechází na kupujícího nebezpečí škody na zařízení.
- 2) Okamžikem předání a převzetí zařízení kupujícím přechází na kupujícího vlastnické právo k zařízení.

#### **VIII. Odpovědnost za vady, záruka za jakost**

- 1) Prodávající odpovídá za vady, jež má zařízení v době jeho předání a dále odpovídá za vady zařízení zjištěné v záruční době.
- 2) Prodávající poskytuje na zařízení záruku za jakost v délce 24 měsíců. Záruční doba počíná běžet dnem předání a převzetí zařízení kupujícím. Záruční doba se prodlouží o dobu, po kterou nebude zařízení provozuschopné z důvodu závad, na něž se vztahuje záruka za jakost.
- 3) Poskytnutá záruka za jakost znamená, že dodané zařízení bude po dobu záruky za jakost plně funkční a bude mít vlastnosti odpovídající právním předpisům, obsahu technických norem, eventuálně dalších technických požadavků či norem (např. ISO), které má zařízení splňovat, a které se na dané zařízení vztahují, a bude mít vlastnosti uváděné výrobcem či prodávajícím.
- 4) Prodávající je povinen provádět pravidelné převjímací zkoušky a zkoušky dlouhodobé stability BRT zařízení v souladu s platnou legislativou.
- 5) Plnění poskytnutá prodávajícím na základě uplatnění záruky za jakost ze strany kupujícího zahrnují zejména veškeré práce spojené s odstraněním reklamovaných závad, dodání veškerých náhradních dílů, veškeré cestovní náhrady, jakož i další náklady související s odstraňováním reklamovaných vad zařízení.
- 6) Kupující je v případě závady zařízení povinen závadu nahlásit (reklamovat) prodávajícímu telefonicky na ~~xxxxxxxx~~ či e-mailem na ~~xxxxxxxx~~. Závadu nahlášenou telefonicky kupující potvrdí nahlášením závady e-mailem. Reklamace musí obsahovat stručný popis toho, jak se vada projevuje.
- 7) V případě uplatnění záruky za jakost může kupující:
  - požadovat bezplatné odstranění reklamovaných vad zařízení,
  - požadovat bezplatné dodání nového bezvadného zařízení, pokud reklamovanou vadu není možné z technického hlediska odstranit nebo pokud by její odstraňování trvalo déle než 15 dnů nebo pokud není reklamovaná vada do 15 dnů odstraněna; prodávající je pak povinen dodat kupujícímu bezplatně náhradní plnění do 15 dnů ode dne uplatnění požadavku ze strany kupujícího,
  - požadovat poskytnutí slevy z kupní ceny, nebo

- odstoupit od smlouvy v případě, že se jedná o opakující se vady stejného druhu nebo pokud kupující v souladu s touto smlouvou požadoval nové bezvadné zařízení a toto mu nebylo dodáno ani do 60 dnů ode dne uplatnění tohoto požadavku.
- 8) Prodávající je povinen nastoupit na opravu zařízení nejpozději do 24 hod. počítaných od nahlášení závady kupujícím a závadu odstranit nejpozději do 72 hod. počítaných od nástupu prodávajícího k odstranění závady, pokud se strany nedomluví jinak.
  - 9) Po odstranění závady je prodávající povinen předat objednateli servisní výkaz, ve kterém bude specifikována závada, způsob a čas jejího odstranění. Dnem podpisu servisního výkazu oprávněnou osobou kupujícího, ze kterého bude vyplývat, že byla závada odstraněna, se závada považuje za odstraněnou.
  - 10) Záruka za jakost se prodlouží o dobu, po kterou nebude zařízení provozuschopné z důvodu závad, na něž se vztahuje záruka za jakost.
  - 11) Po dobu záruky za jakost se prodávající zavazuje provádět odbornou údržbu zařízení v souladu se zákonem č. 268/2014 Sb.
  - 12) Po dobu 10 let ode dne dodání zařízení je prodávající povinen provádět update a upgrade software zařízení, a to vždy nejpozději do 2 měsíců od uvolnění upgrade výrobcem software (pro daný region).

### **IX. Dodávky radionuklidových zdrojů**

- 1) Prodávající se zavazuje dodat kupujícímu **15** ks radionuklidových zdrojů o minimální aktivitě 370 GBq kompatibilního se zařízením (dále také „spotřební materiál“).
- 2) Prodávající se zavazuje dodávat spotřební materiál tak, že dodá vždy 1 kus spotřebního materiálu, a to posledního pracovního dne předcházejícímu **122** kalendářnímu dni ode dne předání předchozího, pokud se smluvní strany nedohodnou jinak, a to na místo dle čl. V. odst. 2 smlouvy. První dodávka spotřebního materiálu proběhne posledního pracovního dne předcházejícího **122** kalendářnímu dni ode dne předání zařízení kupujícímu.
- 3) Při převzetí spotřebního materiálu předá prodávající kupujícímu fakturu a dodací list, který kupující potvrdí.
- 4) K převzetí zboží a potvrzení dodacího listu v místě dodání zboží jsou oprávněni zaměstnanci Oddělení radiologické fyziky kupujícího.
- 5) Kupní cena 1 ks radionuklidového zdroje činí 225 209,- Kč bez DPH.
- 6) Tato cena zahrnuje veškeré náklady kupujícího na pořízení radionuklidových zdrojů jako např. instalaci spotřebního materiálu, testy stanovených jejich výrobcem, dodání protokolů o přijímací zkoušce, osvědčení pro uzavřené radionuklidové zářiče, provedení redukované zkoušky dlouhodobé stability, odvoz a likvidace starého spotřebního materiálu, přírážky distributorů, celní poplatky, dopravné, balné, apod.
- 7) DPH bude dopočítána a spolu s kupní cenou spotřebního materiálu uhrazena ve výši dle právních předpisů účinných ke dni uskutečnění zdanitelného plnění.
- 8) Ustanovení čl. IV. odst. 4) – 6) se použijí obdobně.
- 9) Prodávající se zavazuje kupujícímu dodávat spotřební materiál i po dodání **15** ks spotřebního materiálu, a to minimálně po dobu 10 let ode dne uzavření smlouvy. Prodávající se v této souvislosti zavazuje dodávat spotřební materiál nejvýše za cenu dle čl. IX. odst. 5 smlouvy. Prodávající je oprávněn s účinností od 1. dubna roku, který bezprostředně následuje po roce, v němž byl dodán **15.** kus spotřebního materiálu, zvýšit kupní cenu spotřebního materiálu o přírůstek průměrného ročního indexu spotřebitelských cen (dále jen „míra inflace“) vyhlášený Českým statistickým úřadem za předcházející kalendářní rok, vždy však nejvýše o 5 %. Zvýšení ceny je účinné od okamžiku doručení písemného oznámení prodávajícího o zvýšení kupní ceny kupujícímu. Toto oznámení musí obsahovat míru inflace, zvýšenou cenu a podrobnosti výpočtu zvýšení.

### **X. Smluvní pokuty**

- 1) V případě prodloužení kupujícího s úhradou kupní ceny, je kupující povinen uhradit prodávajícímu úrok z prodloužení ve výši dle nařízení vlády č. 351/2013 Sb., kterým se určuje

výše úroků z prodlení a nákladů spojených s uplatněním pohledávky, určuje odměna likvidátora, likvidačního správce a člena orgánu právnické osoby jmenovaného soudem a upravují některé otázky Obchodního věstníku a veřejných rejstříků právnických a fyzických osob.

- 2) V případě prodlení prodávajícího s dodáním zařízení či spotřebního materiálu v souladu s touto smlouvou je prodávající povinen uhradit kupujícímu smluvní pokutu ve výši 3.000 Kč, a to za každý započatý den prodlení.
- 3) V případě prodlení prodávajícího s nástupem na opravu zařízení nebo s odstraněním závady je prodávající povinen uhradit kupujícímu smluvní pokutu ve výši 300 Kč, a to za každou započatou hodinu prodlení a za každou závadu.
- 4) V případě prodlení prodávajícího s provedením update či upgrade řídicího software zařízení je prodávající povinen uhradit kupujícímu smluvní pokutu ve výši 300 Kč, a to za každý započatý den prodlení.
- 5) Prodávající je povinen uhradit smluvní pokutu kupujícímu do 30 dnů počítaných ode dne doručení jejího vyúčtování prodávajícímu.
- 6) Zaplacení jakékoli z výše uvedených smluvních pokut se nedotýká nároku kupujícího na náhradu škody v plné výši.

## **XI. Ostatní ujednání**

- 1) Tato smlouva nabývá platnosti dnem jejího podpisu smluvními stranami a účinnosti dnem uveřejnění smlouvy v Registru smluv ([smlouvy.gov.cz](http://smlouvy.gov.cz)).
- 2) Smluvní strany prohlašují, že souhlasí s uveřejněním této smlouvy v úplném znění v Registru smluv ve smyslu zákona č. 340/2015 Sb., o registru smluv, ve znění pozdějších předpisů, jakož i s uveřejněním úplného znění případných dohod (dodatků), kterými se tato smlouva doplňuje, mění, nahrazuje nebo ruší. Smluvní strany se dohodly, že uveřejnění smlouvy v Registru smluv v souladu s výše citovaným zákonem zajistí kupující.
- 3) Tato smlouva je vyhotovena ve dvou stejnopisech s platností originálu, z nichž každá smluvní strana obdrží po jednom.
- 4) Osobou oprávněnou za kupujícího:
  - k převzetí zařízení a podpisu předávacího protokolu,
  - k reklamaci závad zařízení a podpisu servisních výkazů,
  - komunikovat s oprávněnými zaměstnanci prodávajícího ohledně dodávky zařízení a souvisejících činností,je ~~xxxxxxxxxx~~.
- 5) V otázkách výslovně neupravených touto smlouvou se závazky smluvních stran řídí ustanoveními příslušných právních předpisů, zejména § 2079 a násl. zákona č. 89/2012 Sb., občanského zákoníku (dále jen „občanský zákoník“) upravujícími kupní smlouvu.
- 6) Veškeré změny této smlouvy mohou být učiněny výhradně písemnou formou, prostřednictvím vzestupně číslovaných dodatků podepsaných oběma smluvními stranami.
- 7) Kupující je oprávněn od této smlouvy odstoupit zejména v případě:
  - uvedeném v čl. VIII. odst. 6 této smlouvy,
  - že je prodávající v prodlení s dodávkou déle než 30 dnů,
  - že dodané zařízení nesplňuje požadavky uvedené v této smlouvě, požadavky právních předpisů, technických a jiných norem.
- 8) V ostatních případech je kupující oprávněn od této smlouvy odstoupit v souladu s § 2001 občanského zákoníku.
- 9) Prodávající je oprávněn od této smlouvy odstoupit v případě, že kupující bude v prodlení s úhradou kupní ceny déle než 2 měsíce.
- 10) Odstoupením od smlouvy se smlouva rozvazuje dnem doručení odstoupení druhé smluvní straně.
- 11) Prodávající je oprávněn převést svoje práva a povinnosti z této smlouvy vyplývající na jinou osobu pouze s písemným souhlasem kupujícího.

- 12) Smluvní strany souhlasí se zveřejněním této smlouvy, případných dodatků uzavřených k této smlouvě, dalších smluv na tuto smlouvu navazujících, jakož i se zveřejněním dalších aspektů tohoto smluvního vztahu.
- 13) Prodávající si je vědom toho, že v souladu s § 2 písm. e) zákona č. 320/2001 Sb., o finanční kontrole ve veřejné správě, ve znění pozdějších předpisů, je osobou povinnou spolupůsobit při výkonu finanční kontroly. Prodávající se zavazuje poskytnout kontrolním orgánům při provádění kontroly maximální součinnost. Prodávající je zároveň povinen zavázat své subdodavatele, aby tito spolupůsobili při provádění kontroly a poskytovali kontrolním orgánům při provádění kontroly maximální součinnost.
- 14) Smluvní strany se v souladu s § 89a zákona č. 99/1963 Sb., občanský soudní řád ve znění pozdějších předpisů dohodly, že místně příslušným soudem je Městský soud v Brně.
- 15) Pokud jakékoliv ustanovení této smlouvy netvořící její podstatnou náležitost je nebo se stane neplatným nebo nevymahatelným jako celek nebo jeho část, je plně oddělitelným od ostatních ustanovení této smlouvy a taková neplatnost nebo nevymahatelnost nebude mít žádný vliv na platnost a vymahatelnost jakýchkoliv ostatních ustanovení z této smlouvy, strany se zavazují v rámci této smlouvy nahradit prostřednictvím dodatku k této Smlouvě toto neplatné nebo nevymahatelné oddělené ustanovení takovým novým platným a vymahatelným ustanovením, jehož předmět bude v nejvyšší možné míře odpovídat předmětu původního odděleného ustanovení. Pokud však jakékoliv ustanovení této smlouvy tvořící její podstatnou náležitost je nebo se stane neplatným nebo nevymahatelným jako celek nebo jeho část, strany nahradí neplatné nebo nevymahatelné ustanovení v rámci nové smlouvy takovým novým platným a vymahatelným ustanovením, jehož předmět bude v nejvyšší možné míře odpovídat předmětu původního ustanovení obsaženému v této smlouvě.
- 16) Nedílnou součástí této smlouvy jsou následující přílohy:
- Příloha č. 1 – Technická specifikace zařízení,
  - Příloha č. 2 – Soupis jednotlivých prvků zařízení,
  - Příloha č. 3 – DICOM Conformance Statement.
- 17) Smluvní strany prohlašují, že si tuto smlouvu před jejím podpisem přečetly, že s jejím obsahem souhlasí a na důkaz výše uvedeného připojují své vlastnoruční podpisy.

V Brně dne -4.09.2017

V Brně dne 18.8.2017

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za kupujícího  
prof. MUDr. Jan Žaloudík, CSc.  
ředitel Masarykova onkologického ústavu

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za prodávajícího  
Ing. Pavel Tobiáš, Ph.D., MBA  
jednatel Elekta Services s.r.o.

# Technická specifikace zařízení

## Příloha č. 1

### Afterloader

Qty	Article Number	Description
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1 136149B01

#### Flexitron HDR 20CH (220-240V)

The Flexitron system is a remotely controlled brachytherapy afterloading system. In combination with dedicated applicators, the Flexitron is suitable for intracavitary, interstitial, intraluminary, bronchial, endovascular, intra-operative, and surface brachytherapy treatment. The Flexitron HDR is a High Dose Rate brachytherapy configuration that is designed to accept Flexisource HDR (iridium-192) sources, and is available in different channel versions: 10 channels, 20 channels, and 40 channels. The treatment unit features:

- Mobile treatment delivery unit with built-in source container for approved storage of up to 444 GBq (12 Ci) Ir-192. Nominal source strength for HDR Iridium-192 (370 GBq (10.0 Ci)).
- Super flexible source cable made of one piece with a partial reduced diameter from Ø0,85mm to Ø0,5mm
- Metric source stepping with a 1mm resolution to any position in the 400mm treatment window
- Architecture that supports future platform innovations
- Enabled option for installing connectivity to OIS via DICOM Unified Worklist
- Forward stepping source to ensure the most accurate treatment delivery
- Channel selector that permanently monitors all connections
- Additional battery powered DC motor source retraction system as back up for source return security
- Additional manual source retraction system with drive motor disconnection mechanism as second back up for source return security
- Integrated radiation detector for source return confirmation
- Modular precision source drives which permanently monitor all source steps made

#### Includes:

- A check cable with a dummy source
- One GYN SS Transfer Tube for connection to the Source Position Check Ruler and to an optional Source Verification System
- Treatment Communication Console (TCC) on a desktop PC, 24 inch TFT display.
- HDR Treatment Control Panel (TCP) including cables & installation kit
- Uninterruptible Power Supply (UPS)
- Flexitron software license
- Flexitron HDR User Manual

The Treatment Communication Console features a simple, visual user interface which facilitates easy operation of an extensive number of functions:

- Importing treatment planning parameters in DICOM format from Brachytherapy planning systems via network, CD/DVD, or USB storage.
- Preparation of treatments
- Store and retrieve for later sessions
- Monitoring and display of the ongoing treatment
- Enhanced security with authorization levels
- Extensive reporting
- Logging of treatment and machine data

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|---|-----------|--|
| 1 | 077027    | <p><b>Room Radiation Monitor System</b><br/>Independent room radiation monitoring system with radiation on/off indication outside the treatment room, battery backup and operating instructions.</p>   |
| 1 | 077241    | <p><b>Source Verification System PTW</b><br/>Complete system to verify the strength of the source of the afterloaders Flexitron and microSelectron. Suitable for Cobalt-60 and Iridium-192.</p>  |
| 1 | 136192    | <p><b>Transport Container for Ir192 Sources consisting of:</b><br/>Internationally approved low weight tungsten transport and service container for the transportation of one Ir192 FlexiSource source to and from Flexitron units.</p>  |
| 1 | 136191    | <p><b>Emergency Set consisting of:</b><br/>Flexitron emergency set consisting of an emergency container, forceps and cutter.</p>   |
| 1 | 136196    | <p><b>3 CH Source Position Check Ruler</b><br/>Flexitron QC tool to verify the correct treatment position of the sources &amp; check-cable and the length of each of the transfer tubes. The scale ranges from 0 to 400 mm. Includes a wall bracket to keep the position ruler at fixed distance to a camera and the #137183 - SPCR Adapter Set to connect GYN SS Transfer Tubes.</p>  |
| 1 | 138200    | <p><b>Source Position Simulator for Flexitron with dummy source cable</b><br/>Source Position Simulator with a dummy source cable for measurement of the internal length of applicators and to visualize dwell positions radiographically. For use with the Flexitron HDR, PDR and Cobalt afterloaders only.</p>   |
| 1 | 136164    | <p><b>Source Exchange Tool consisting of:</b><br/>The source exchange tool is required to load or unload sources from the Flexitron</p>  |
| 1 | 076059    | <p><b>Start Enable Interlock</b><br/>Safety feature to confirm that only the patient and no other person is in the treatment room when treatment starts.</p>   |
| 1 | 136134    | <p><b>Remote Controlled Camera</b><br/>Camera located in the treatment room, that allows to monitor the source position in the source position check ruler, during an alignment procedure.</p>   |
| 1 | 106072A01 | <p>FLEXITRON CONNECTIVITY TO ARIA</p>  |
| 1 | 136147    | <p><b>Flexisource Iridium-192 (Ã~ 0.85mm x 4.5mm), 10 Ci</b><br/>The Flexitron source-capsule is connected to a super flexible drive cable for moving and positioning the source up to 1400 mm (dwell position 400). The source activity is 10 Ci +/- 10% at moment of delivery on site.</p>   |
| 1 | 136148    | <p><b>Flexitron Check Cable consisting of:</b><br/>Check cables are to be replaced with every source replacement (at least every 6 month)<br/>Check cables are automatically included in the source supply contract.</p>   |
| 1 | 997400A05 | <p><b>Area E: Shipping And Handling Costs</b></p>  |
| 1 | 200709    | <p><b>Flexitron Operator Training consisting of:</b><br/>This 1 day on-site training addresses the user aspects of the Flexitron ( HDR, PDR or Cobalt) and is intended to familiarize the hospital staff with operating the system and handling the safety issues. The course consists of demonstrations, discussions and hands-on cases for practical use. Maximum number of participants is 4. Travel, accommodation and subsistence expenses will be itemized and charged separately at actual costs.</p> |
| 1 | 200766    | <p><b>Training for Afterloader Connectivity to OIS</b><br/>Training for the Elekta afterloader connectivity to OIS by an Elekta trained and qualified Service Engineer. Total estimated training time is 2 hours and will be performed in combination with the Installation for Elekta Connectivity to OIS.</p>  |



Agreement Number: ~~xxxxx~~

Version: 2

Date: August 8, 2017

- 1 199107 **Installation Flexitron consisting of:**  
Installation of the Flexitron. Estimated installation time is 4 days. Structural alterations are not included. Travel, accommodation and subsistence expenses will be itemized and charged separately at actual costs.
- 1 199077A02 **Installation NRM in combination with Afterloader**  
Installation of the microSelectron-HDR. Estimated installation time is 1 day. Travel, accommodation & subsistence expenses will be itemized and charged separately at actual cost.
- 1 199113 **Installation for Nucletron Afterloader Connectivity to OIS consists of:**  
Installation of Elekta afterloader connectivity to OIS by an Elekta trained and qualified Service Engineer. Total estimated installation time is ½ day. Travel accommodation and subsistence expenses will be itemized and charged separately at actual costs if the installation does not coincide with a regularly scheduled afterloader source exchange or PMI.

### Oncentra Brachy 3D Advanced

Qty	Article Number	Description
1	170698	<b>New OCB 4.5 server license</b> It is an item required for the split between the two Oncentra TPS (so a sort of Maintenance).
1	170223A04	<b>Oncentra Brachy Advanced 3D</b> Oncentra Brachy Advanced 3D includes 3D+HIPO+IPSA+Applicator Modelling. It is the full package with all 'state of the art' tools for Image registration, applicator modeling as well as optimization. This is a built up license, consisting of: Oncentra Brachy 3D (170243A04), IPSA (170233), HIPO (170332) and Applicator Modeling (170283).
1	170350	<b>Advanced Collapsed Cone Engine (ACE) for Oncentra Brachy</b> Collapsed convolution algorithm is an advanced model based calculation algorithm, according to TG186 recommendations and provides more precise dose calculation, taken into account the delineated ROIs and materials in the surrounding area, like applicators, in-out body and air.
1	170360	<b>Implant Modeling</b> A state of the art modeling tool for highly accurate modeling of implants, that can be reconstructed once and reused in similar cases. This tool helps me to save time enabling me to fully focus on creating the best possible treatment plan.
1	170003	ONCENTRA DVD + HASP KEY
1	170006H01	<b>Oncentra Platform HP consisting of:</b> Oncentra server HP, which can also be used as client, or as stand-alone workstation. Configured with Windows 7, 64 bit, and one TFT monitor.
1	170061	ONCENTRA GPU UPGRADE (FOR Z840 ONLY)
1	170021	<b>WACOM Digitizer Tablet consisting of:</b> The Cintiq 21UX with an Interactive Pen Display. A highly advanced drawing tablet for 3D contouring and Image fusion.
1	035030	<b>Reconstruction Jig 65cm Width consisting of:</b> For 3D reconstruction from semi-orthogonal radiographs. The construction jig gives the accuracy of a simulator using a portable X-ray unit. Including holder for 14" x 17" film cassette.Box size is 65cm.
1	594841	<b>Uninterruptable Power Supply (230V) consisting of:</b>

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The Uninterruptable Power Supply (UPS) is a device which protects your data in case of power loss. The system secures data loss during power failures for servers, hubs and data centers in an optimal way.

1	170783	<p><b>Dicom digitizer software</b>                  Oncentra Film Dicomizer software enables scanning of X-Ray films up to 12.2" x 16.5" using the Flatbed Scanner and the Transparency Unit (TPU). Quick scans are achieved through the Hi-Speed USB connectivity.</p>
1	199171	<p><b>Installation For Oncentra External Beam and/or Oncentra Brachy</b>                  Installation, configuration and on-site testing of the Oncentra Brachy and/or Oncentra External Beam planning system by an Elekta engineer. Estimated installation time 1 day. Travel, accommodation and subsistence expenses will be itemized and charged separately at actual costs unless travel and accommodation are included in this quotation.</p>
1	200732	<p><b>Oncentra User Training consisting of:</b>                  On-site user training on implemented Oncentra modules. The specific course program is agreed together with the customer. The course is intended for physicists, physicians and dosimetrists. The price is per day. The price does not include travel and accommodation costs of the trainer. These will be itemized and charged separately at actual costs. Note: The required number of days is set in agreement with the customer.</p>
1	200723	<p><b>Oncentra Brachy Application Training On Site consisting of:</b>                  A 4 day on-site training on the application aspects of Oncentra Brachy. The course is intended for physicists, physicians and dosimetrists. Maximum number of participants is 4. The price does not include travel and accommodation costs of the trainer. These will be itemized and charged separately at actual costs.</p>
1	200772	<p><b>On site support for Implant Modeling</b>                  On-site support from an Application Specialist dedicated to Implant Modeling module. The price is per day. The price does not include travel and accommodation costs of the clinical consultant. These will be itemized and charged separately at actual costs.</p>

**Oncentra Prostate**

Qty	Article Number	Description
1	131030	<p><b>ECRM (EndoCavity Rotational Mover) consisting of:</b>                  Rotational Mover (ECRM) which is a computer- controlled, motor-driven rotational device used to rotate an Ultrasound probe, a sagittal imaging device. The ultrasound probe is fixed in a probe cradle. The ECRM rotates an endocavity probe around its long axis. In combination with the longitudinal array on a bi-plane rectal Ultrasound probe, the EndoCavity Rotational Mover (ECRM) can create automatically "fanned" data sets.</p>
1	132045	<p><b>OncoSelect Stepper + Stepper Encoder:</b>                  Consisting of the following items:</p> <ul style="list-style-type: none"> <li>• Stepping Head</li> <li>• Column + Stand on wheels</li> <li>• Encoder</li> </ul> <p>Features:</p> <ul style="list-style-type: none"> <li>• Head Rotation of 360°</li> <li>• Elevation of the column by quick action of a side handle</li> <li>• Left and Right travel Knob</li> <li>• Continuous in-out movement by the right- or left-side hand-wheel                         <ul style="list-style-type: none"> <li>◦ Setting of zero reference plane at the base of the prostate</li> <li>◦ Five millimeter stepping mode and continues stepper (probe) movement</li> <li>◦ Stable floor fixation structure</li> <li>◦ Precision and user-friendly controls</li> </ul> </li> </ul>

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The stepper encoder enables the user to automatically import large series of the ultra sound images into Oncentra Prostate™. The inter slice steps can be set from 1 to 5 mm with a one-millimeter increment. Part of the set are the mechanical adaptations to the OncoSelect Stepper Unit and the necessary electronics and cabling.

Consisting of:

- Mechanical adaptation to the OncoSelect Floor Mount Stepper
- Encoder and necessary cabling
- Oncentra Prostate™ Stepper Encoder Electronics
- Footswitch

1 131360

**Adapter Set OncoSelect Stepper - ALOKA consisting of:**

Consists of adapter + probe cradle. Compatible with ECRM.

1 132001A01

**Oncentra Prostate 4.x**

Oncentra Prostate™ enables the user to determine the optimal implant geometry, based upon live ultrasound information. It guides the user during the implantation of the treatment needles and performs the treatment planning, optimization and evaluation of the implant while the patient is still in the operating theater. The first fraction of the treatment can be given directly thereafter in the operating theatre or after the patient leaves the operating theatre. Basic package Oncentra Prostate, including all functionalities for transversal and sagittal imaging during image acquisition and live imaging, contouring, unique needle navigation, inverse planning (Advanced HIPO: inverse planning and calculating the number and place of needles) and manual planning, plan evaluation, Prostate model (sector definition of the prostate, for optimization and evaluation), RTOG export, image fusion for HDR prostate treatment planning.

Consisting of:

- Virtual, live and post planning options
- Imaging modalities supported: US (color Doppler), CT and MR
- Contouring: Pre-defined prostate, Free-hand, Segmental, Continuous, Pearl, automatic contouring, 3D contouring, path contouring
- Dose prescription: normalized dose, prescribed dose
- Normalization: MDPTV, MDP, MTD, absolute dose, on box or point
- Catheter placement: template based, automatic, manual, inverse planning with HIPO
- Optimization methods, geometrical, manual, graphical, optimization history
- Evaluation: dose points, point list, DVH, Monitoring, volume evaluation

Equipped with mobile laptop cart:

- Ergonomic and mobile cart with a high resolution 22 inch monitor and laptop:
  - Laptop with Intel Pentium Processor, with Windows 7.0 operating system
  - Mouse and Keyboard
  - Manuals
- All electronic components and connections for operating Oncentra Prostate
- Prepared for upgrade to Oncentra Seeds Treatment planning

Note:

\* Requires:

- Any ultra sound scanner system and rectal probe with transversal image possibility and (s)VHS-PAL or (s)VHS-NTCS video output
- Stepper Unit with encoder
- ECRM for sagittal imaging (131030)

1 199134

**Oncentra Prostate® / Seeds - Installation consisting of:**

Installation of the Oncentra Prostate® system on site. Estimated installation time is one day. Any alterations to the local network are not included.

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1	199135	<p><b>Installation OncoSelect Stepper consisting of:</b>          Installation of the OncoSelect Stepper by an Elekta trained and qualified Service Engineer. Total estimated installation time is ½ day. This includes the testing and acceptance with the appropriate Elekta prostate devices. Travel accommodation and subsistence expenses will be itemized and charged separately at actual costs.</p>
1	200741	<p><b>Oncentra Prostate / Oncentra Seed Application Support Training consisting of:</b>          A 5-day training on the application aspects of the Oncentra Prostate / Oncentra Seed system at an Elekta Training Facility. The course is intended for Application Specialists. The price is per person. The price does not include travel and accommodation costs. These will be itemized and charged separately at actual costs.</p>

**Applicators and accesories**

Qty	Article Number	Description																										
1	101001	<p><b>Vaginal CT/MR Applicator Set</b>            This non-metallic applicator is designed using a composite fiber tubing, to eliminate distortion on CT or MR images. This enables conformal treatment planning with the use of transverse slices.            Consisting of:</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">Qty #</td> <td>Part</td> </tr> <tr> <td>1 101002</td> <td>Vaginal Tube</td> </tr> <tr> <td>1 101003</td> <td>Intrauterine Tube 15°, 40mm</td> </tr> <tr> <td>1 101004</td> <td>Intrauterine Tube 30°, 60mm</td> </tr> <tr> <td>1 101005</td> <td>Intrauterine Tube 45°, 80mm</td> </tr> <tr> <td>1 101007</td> <td>Set of 4 cylinders, 20mm</td> </tr> <tr> <td>1 101008</td> <td>Set of 4 cylinders, 25mm</td> </tr> <tr> <td>1 101009</td> <td>Set of 4 cylinders, 30mm</td> </tr> <tr> <td>1 101010</td> <td>Set of 4 cylinders, 35mm</td> </tr> <tr> <td>1 101006</td> <td>Cylinder fixation</td> </tr> <tr> <td>1 101013</td> <td>Perineal Bar</td> </tr> <tr> <td>1 101012</td> <td>Sterilizing Caps, CT/MR</td> </tr> </table>	Qty #	Part	1 101002	Vaginal Tube	1 101003	Intrauterine Tube 15°, 40mm	1 101004	Intrauterine Tube 30°, 60mm	1 101005	Intrauterine Tube 45°, 80mm	1 101007	Set of 4 cylinders, 20mm	1 101008	Set of 4 cylinders, 25mm	1 101009	Set of 4 cylinders, 30mm	1 101010	Set of 4 cylinders, 35mm	1 101006	Cylinder fixation	1 101013	Perineal Bar	1 101012	Sterilizing Caps, CT/MR		
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1	084320	<p><b>Shielded Cylindrical Applicator Set</b>            The Shielded Cylindrical Applicator Set is designed for intracavitary treatments when partial shielding is required.</p> <ul style="list-style-type: none"> <li>• Tungsten alloy segments for 90°, 180° and 270° shielding.</li> <li>• Position of the shielding is shown by markers.</li> <li>• Cylinders in four different diameters.</li> <li>• Stainless steel storage and sterilization box.</li> <li>• Stainless steel shields or plastic fillers are available as an option.</li> </ul> <p>Consisting of:</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">Qty #</td> <td>Part</td> </tr> <tr> <td>1 084321</td> <td>Central Tube</td> </tr> <tr> <td>1 084329</td> <td>Tungsten Shielding, 180°</td> </tr> <tr> <td>2 084328</td> <td>Tungsten Shielding, 90°</td> </tr> <tr> <td>1 084322</td> <td>Cylinder, d = 25mm</td> </tr> <tr> <td>1 084323</td> <td>Cylinder, d = 30mm</td> </tr> <tr> <td>1 084324</td> <td>Cylinder, d = 35mm</td> </tr> <tr> <td>1 084325</td> <td>Cylinder, d = 40mm</td> </tr> <tr> <td>1 084327</td> <td>Fixing Nut</td> </tr> <tr> <td>1 084158</td> <td>Sterilizing Caps, 3.2mm</td> </tr> <tr> <td>1 084330</td> <td>Sterilization Box, for 084.320</td> </tr> <tr> <td>1 094239</td> <td>Sterilization Advice Chart</td> </tr> <tr> <td>1 090609</td> <td>User Guide Shielded Cylindrical Applicator Set</td> </tr> </table>	Qty #	Part	1 084321	Central Tube	1 084329	Tungsten Shielding, 180°	2 084328	Tungsten Shielding, 90°	1 084322	Cylinder, d = 25mm	1 084323	Cylinder, d = 30mm	1 084324	Cylinder, d = 35mm	1 084325	Cylinder, d = 40mm	1 084327	Fixing Nut	1 084158	Sterilizing Caps, 3.2mm	1 084330	Sterilization Box, for 084.320	1 094239	Sterilization Advice Chart	1 090609	User Guide Shielded Cylindrical Applicator Set
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1 090609	User Guide Shielded Cylindrical Applicator Set																											

INITIALS

1 110270A01

**Utrecht Interstitial CT/MR Applicator Set (6mm) consisting of:**

The Utrecht Interstitial CT/MR Applicator set is specially developed for treatment of gynecologic cancers through either intracavitary or interstitial brachytherapy. This non-metallic set uses the ovoids as templates for needle insertion. The applicator is MR-safe. This set contains a (Ø 6mm) Intrauterine tube.

Consisting of:

Qty	#	Part
1	189735	Ovoid Tube 1
1	189740	Ovoid Tube 2
1	189739	Intrauterine Tube 15 °
1	189745	Intrauterine Tube 30 °
1	110240	Interstitial Ovoid Pair 15 mm 15 °
1	110241	Interstitial Ovoid Pair 20 mm 15 °
1	110242	Interstitial Ovoid Pair 25 mm 15 °
1	110243	Interstitial Ovoid Pair 30 mm 15 °
1	189714	Insertion Tool
1	110268	Obturator set (set of 5 pcs)
1	189751	Rectal Retractor 40
1	189742	Rectal Retractor 30
1	189741	Fixation Nut for Rectal Retractor
1	189722	Fixation Mechanism
1	189750	Fixation Clip
1	189930	Fixation Nuts set (set of 5 pcs , spare)
1	101012	Sterilization Caps (pack of 50 pcs)
1	110267	Cervical Stopper
1	110283	Screw Driver Titanium for Ovoids and Stopper
10	008033	Plastic Screw M5 PPSU
1	189040	Cleaning brush set
1	189043	Cleaning brush set

1 189730

**Fletcher CT/MR Applicator**

The Fletcher CT/MR Applicator is MR-safe and designed for the treatment of cervical cancer according the "Fletcher" approach especially when used in combination with CT and/or MR Imaging for treatment planning purposes.

The flexible geometry of the Fletcher style applicator ensures a perfect fit with patient anatomy.

Consisting of:

Qty	#	Part
1	189735	Ovoid tube 1
1	189740	Ovoid tube 2
1	189739	Intrauterine Tube (6 mm), 15°
1	189745	Intrauterine Tube (6 mm), 30°
1	189783	Ovoid pair 15mm (half ovoids)
1	189754	Ovoid pair 20mm
1	189755	Ovoid pair 25mm
1	189756	Ovoid pair 30mm
1	189757	Ovoid pair 35mm
1	189758	Ovoid pair 40mm
1	189742	Rectal retractor 30mm
1	189751	Rectal retractor 40mm
1	189741	Fixation nut rectal retractor
1	189722	Adjustable fixing mechanism
1	189930	Set of 5 fixing nuts (spare)
1	110267	Cervical stopper
1	110283	Screwdriver Ti for Ovoid and Stopper
1	189750	Fixation clip ovoid tubes
1	101012	Sterilizing Caps, CT/MR
10	008033	Ovoid Screws

1 085210

**Miami Vaginal Applicator Set**

The stainless steel applicator was designed in cooperation with the University of Miami and consists of a cylinder with six treatment tubes equally spaced around the surface of the

cylinder. This enable versatility in the treatment of vaginal, rectal and uterine carcinomas. Three different curvatures of intrauterine tubes are included and adjust to the uterine length. The vaginal cylinder is 30mm in diameter with cylinder sleeves of 35 and 40 mm.

Consisting of:

Qty #	Part
1	085211 Central Tube
1	084455 Intrauterine tube, straight
1	084456 Intrauterine tube, 15°
1	084457 Intrauterine tube, 30°
1	085212 Cylinder, (d) 30mm, with marker
1	085213 Cylinder Sleeve, (d) 35mm
1	085214 Cylinder Sleeve, (d) 40mm
1	085218 Cone insert
1	006182 Screwdriver
1	598027 Allen Key Screwdriver 3mm
1	083147 Sterilizing Caps, 1.9mm
1	084158 Sterilizing Caps, 3.2mm

1 110018

**Henschke Ti Applicator Set**

The Henschke Applicator has hemispherical colpostats with integrated tungsten alloy shielding for dose reduction in bladder and rectum.

- Plastic caps to increase the diameter of the ovoids.
- Dual ovoid tube assembly incorporates an adjustable ovoid separation and shielding.

Consisting of:

Qty #	Part
1	110019 Dual Colpostat tube (ovoid tube 1 and 2 and fixation mechanism)
1	110435 Intrauterine tube straight
1	110436 Intrauterine tube 15°
1	110437 Intrauterine tube 30°
1	110438 Intrauterine tube 45°
2	110430 Cervical Stopper
1	084158 Set of 50 Sterilization Caps Silicone
5	008033 Adjusting Screw (spare for cervical stopper)
1	065085 Colpostat Cap Ø25 (pair)
1	065086 Colpostat Cap Ø30 (pair)
2	110283 Titanium Screwdriver for stopper

1 084050

**Ring Applicator Set**

The stainless steel Ring Applicator Set is attractive for its simplicity, fixed geometry and fast planning. A rectal retractor can be used to push the rectal/vaginal wall to a fixed distance from the source.

This set contains ring tube at 30°, 45° and 60°.

Consisting of:

Qty #	Part
1	085095 Ring Applicator Set, 30°
1	085096 Ring Applicator Set, 45°
1	085097 Ring Applicator Set, 60°
1	084072 Perineal bar
1	084056 Ring Tube, d = 34mm, 30°
1	084055 Ring Tube, d = 34mm, 45°
1	084054 Ring Tube, d = 34mm, 60°
1	084051 Ring Cap, d = 34mm
1	084158 Sterilizing Caps, 3.2mm

1 101035

**Ring Applicator Set, CT/MR**

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This non-metallic applicator is designed using a composite fiber tubing, to eliminate distortion on CT or MR images. This enables conformal treatment planning with the use of transverse slices. To insure applicator and treatment integrity it is designed with a fixed geometry.

Consisting of:

Qty #	Part
1	101060 Ring Applicator Set, 30°, CT-MR
1	101061 Ring Applicator Set, 45°, CT-MR
1	101062 Ring Applicator Set, 60°, CT-MR
1	101038 Ring Tube, d=34mm, 30° 1
1	101044 Ring Tube, d=34mm, 45°
1	101050 Ring Tube, d=34mm, 60°

1 086037 CERVICAL STOP ROUND 13 MM

1 101015 **CT/MR Sterilization Box**

The Sterilization box does not include the additional accessories tray.

1 110700 **5 Spare Pins For Adj. Fixing mech. Fletcher Appl.**

1 189072 **Stepper Holder Set, OncoSelect consisting of:**

The OncoSelect Stepper Holder is designed for fixation of a Prostate Stepper Template on an OncoSelect stepper. It is normally used in combination with the Grid Face Plate Set that corresponds to the ultrasound system that is applied.

Consisting of:

Qty #	Part
1	189076 OncoSelect Stepper Holder Assembly
6	189168 Fixation Bolt Template
1	598027 Allen Key Screwdriver 3mm
1	Sterile. Advice Chart Stepper Holder/Grid Faceplate

1 110740 **Grid Face Plate Set For Aloka/Civco**

1 130048 **Fixation Needle Set (10x2 needles) consisting of:**

Stabilizing needle set for prostate fixation during insertion of implantation needles. Needle set will be delivered in a quantity of 10x2 sterilized needles. Needle size is 18GA, length is 20cm.

1 189067 **Prostate Stepper Template, 6F**

The Prostate Stepper Template is designed for guidance and fixation of Proguide plastic needles and can be used with stainless steel needles as well. The square lightweight template has a universal grid array and an advanced needle fixation with a disposable plate that locks up to 30 needles in a movement.

Compatible with wide range of stepper devices and ultrasound grid resolutions.

Template holders and Grid faceplates need to be ordered separately.

Consisting of:

Qty #	Part
1	189158 Base Plate Stepper, 6F
1	189161 Front Plate Stepper, 6F
1	189166 Fixation Plate Support assy
1	189165 Set of 10 Disposable Fixation Plates, 6F (5x2)
1	189167 Eccentric Axle 1
2	189170 Assembly Bolt Template
1	189205 Assembly Screwdriver
1	189173 Fixation Screwdriver
1	189041 Cleaning Brush Ø3 x 100, Set of 3
1	189043 Cleaning Brush Ø6.5 x 100, Set of 3

10 137258 **Esophageal Applicator Set Bonvoisin Gerard (for Flexitron)**

This applicator is designed to minimize the mucosal dose while insuring optimal depth dose penetration of the esophageal wall by centering the treatment tube within a bougie tube. The tapered flexible tip of the bougie tube assist in bouginage of esophageal stenosis.

Consisting of:

Qty	#	Part
1	137259	Esophageal flex catheter set 1400
1	137261	Esophageal applicator Ø6mm 18Fr
1	137263	Esophageal applicator Ø8mm 24Fr
1	137265	Esophageal applicator Ø10mm 30Fr
1	137276	Applicator fixation mask
1	137279	Applicator mask strap (pack of 5)
1	137277	Applicator cleaning accessories

20 137259 ESOPHAGEAL FLEX CATHETER SET 1400

1 089095 **Freiburg Flap Applicator Set**  
 The Freiburg Flap is a flexible mesh style surface mold with 36 channels for flexible implant tubes with a separation of 10 mm and a channel length of 24 cm. The mold can be easily adapted to any shape and maintains a constant distance to the skin of 5 mm for reproducible dosimetry.

Consisting of:

Qty	#	Part
1	592976	Freiburg Flap
1	189445	CT/MR Flexible Implant Tube, 6F
1	189367	Cutter Flexible Implants
1	189458	Radio lucent button white, 6F, (box of 72)

1 189932 **CT/MR Applicator Clamp with Base Plate**  
 The CT/MR Applicator Clamp is fully compatible with CT and MR imaging. It will not distort the images nor will it be influenced by the magnetic field. All variables such as length, rotation, sloping and angle of the inserted applicator can be fixed by turning one knob. For fixation of the applicator itself, various inserts are provided that allow fitting all available Elekta applicators within the clamp.

The entire assembly requires no oil, which will allow the clamp to be easily taken apart for cleaning purposes. All clamp components can be steam sterilized. The CT/MR Applicator Clamp is attached to a base plate for immobilization in any hospital bed.

Consisting of:

Qty	Part
1	Fixation Part
1	Base plate
4	Insert Ø 3
4	Insert Ø 6
4	Insert Ø 12

1 110570 **X-ray Catheter Set GYN Stainless Steel (SS) For Flexitron consisting of:**  
 X-ray marker set for the stainless steel gynecological applicators for using X-ray and the Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

1 110400 **X-ray Catheter Set CT/MR GYN (for Flexitron)**  
 X-ray marker set containing 4 markers, for use in combination with gynecological applicators suitable for film-based planning only and the Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

Consisting of:

Qty	#	Part
1	110401	CT/MR X-Ray Catheter -R1-
1	110402	CT/MR X-Ray Catheter -O1-
1	110403	CT/MR X-Ray Catheter -O2-
1	110404	CT/MR X-Ray Catheter -IU3-

1 110290 **MR Line Marker Set consisting of:**  
 Makes gynecological CT/MR applicators visible on MR-imaging. The Line-marker, consisting of a plastic tube to be filled with fluid, will be placed inside the source-channel of the concerning intrauterine-, ovoid- and ring-tubes of the applicators.

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Consisting of:

Qty #	Part
4	110342 MR Line Marker
1	77700081 User Manual

1 089089

**X-ray Catheter Set, 50cm (1-9)**

X-ray marker set numbered from 1-9, with a length of 500mm for use in combination with the microSelectron and Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

Consisting of:

Qty #	Part
1	089441 X-Ray Catheter no. 1, 50cm
1	089442 X-Ray Catheter no. 2, 50cm
1	089443 X-Ray Catheter no. 3, 50cm
1	089444 X-Ray Catheter no. 4, 50cm
1	089445 X-Ray Catheter no. 5, 50cm
1	089446 X-Ray Catheter no. 6, 50cm
1	089447 X-Ray Catheter no. 7, 50cm
1	089448 X-Ray Catheter no. 8, 50cm
1	089449 X-Ray Catheter no. 9, 50cm
1	089459 Measuring wire, 50cm

1 089090

**X-Ray Catheter Set, 50cm (10-18)**

X-ray marker set numbered from 10-18, with a length of 500mm for use in combination with the microSelectron and Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

Consisting of:

Qty #	Part
1	089450 X-Ray Catheter no. 10, 50cm
1	089451 X-Ray Catheter no. 11, 50cm
1	089452 X-Ray Catheter no. 12, 50cm
1	089453 X-Ray Catheter no. 13, 50cm
1	089454 X-Ray Catheter no. 14, 50cm
1	089455 X-Ray Catheter no. 15, 50cm
1	089456 X-Ray Catheter no. 16, 50cm
1	089457 X-Ray Catheter no. 17, 50cm
1	089458 X-Ray Catheter no. 18, 50cm
1	089459 Measuring wire, 50cm

1 089082

**X-Ray Catheter Set, 30cm (1-9)**

X-ray marker set numbered from 1-9, with a length of 300mm for use in combination with the microSelectron and Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

Consisting of:

Qty #	Part
1	089421 X-Ray Catheter no. 1, 30cm
1	089422 X-Ray Catheter no. 2, 30cm
1	089423 X-Ray Catheter no. 3, 30cm
1	089424 X-Ray Catheter no. 4, 30cm
1	089425 X-Ray Catheter no. 5, 30cm
1	089426 X-Ray Catheter no. 6, 30cm
1	089427 X-Ray Catheter no. 7, 30cm
1	089428 X-Ray Catheter no. 8, 30cm
1	089429 X-Ray Catheter no. 9, 30cm
1	089439 Measuring wire, 30cm

1 089083

**X-Ray Catheter Set, 30cm (10-18)**

X-ray marker set numbered from 10-18, with a length of 300mm for use in combination with the microSelectron and Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

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Consisting of:

Qty #	Part
1	089430 X-Ray Catheter no. 10, 30cm
1	089431 X-Ray Catheter no. 11, 30cm
1	089432 X-Ray Catheter no. 12, 30cm
1	089433 X-Ray Catheter no. 13, 30cm
1	089434 X-Ray Catheter no. 14, 30cm
1	089435 X-Ray Catheter no. 15, 30cm
1	089436 X-Ray Catheter no. 16, 30cm
1	089437 X-Ray Catheter no. 17, 30cm
1	089438 X-Ray Catheter no. 18, 30cm
1	089439 Measuring wire, 30cm

1 189039 **CT Marker Set, 294mm, Yellow (package of 18) consisting of:**  
For use with ProGuide Needles.

1 137673 X-RAY MARKER # 1400BC-1

1 111650 **CT/MR GYN Transfer Tube Set (for Flexitron)**  
The CT/MR GYN Transfer Tube Set for Flexitron provides the option to connect CT/MR applicators to the Flexitron.

Consisting of:

Qty #	Part
1	111651 CT/MR GYN Transfer Tube keyed # 1
1	111652 CT/MR GYN Transfer Tube keyed # 3
1	111653 CT/MR GYN Transfer Tube keyed # 5

1 137094 **Flexitron Transfer Tube Set for 6F Flexibles (1-10)**

1 137095 **Flexitron Transfer Tube Set for 6F Flexibles (11-20)**

1 111680 **GYN SS Transfer Tube Set (for Flexitron)**  
The GYN SS Transfer Tube Set for Flexitron provides the option to connect Stainless steel applicators with a GYN connection to the Flexitron.

Consisting of:

Qty #	Part
1	111681 GYN SS Transfer Tube keyed # 1
1	111682 GYN SS Transfer Tub Tube keyed # 3
1	111683 GYN SS Transfer Tube keyed # 5

1 111805 **Transfer Tube Set For Metal Needles 1-10 consisting of:**  
The Transfer Tube Set for metal needles provides the option to connect Metal needles to the Flexitron Afterloader.

1 137064 ADAPTOR FOR 5F CATHETERS

1 137043 **SPCR Adapter Set To Connect 6F Catheter Transfer Tubes**  
This set is required for connecting a 6F Catheter Transfer Tube Set (#137094, #137095, #137096, #137097) to the Source Position Check Ruler (SPCR, #136196). This set consists of the SPCR adapter (#137781) and a user manual. NB. This set is only compatible with Catheter Transfer Tube Sets that were delivered after 1 May 2014.

1 137180 **SPCR Adaptor Set To Connect CT/MR GYN Transfer Tubes consisting of:**  
This set is required for connecting the GYN SS Transfer Tube Set (#111650) to the Source Position Check Ruler (SPCR, #136196). This set consists of the SPCR adapter (#137181) and a user manual.

1 137818 **Metal Needles Connection Block**  
This set is required for connecting the Transfer Tube Sets for metal needles (#111805, #111816, #111827, #111838) to the Source Position Check Ruler (SPCR, #136196). This set consists of the SPCR adapter (#137810) and a user manual.

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3	189602	<p><b>ProGuide Sharp Needle Set, 6F x 200mm consisting of:</b>          This type of flexible implant needle is specifically manufactured for the Elekta remote afterloader. The disposable plastic needle has a sharp integrated closed tip to enable easy penetration of the skin surface. The needle tip is hollow to allow for a more distal source position.          ProGuide Sharp Needle Set includes 3 pouches of 6 needles (total 18 Needles), 6 ProGuide obturators, User Guide and Sterilization Advice.</p>
5	110230	<p><b>ProGuide Needle 6F Round 294mm consisting of:</b>          Set of 5 Single packed, Delivered Sterile</p>
5	110232	<p><b>Guiding Tube Ovoids, Set Of 5 consisting of:</b>          Single packed, delivered sterile</p>

Qty	Article Number	Description
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1	084350	<p><b>Vaginal Applicator Set</b>          The Vaginal Applicator can be used to treat vaginal cuff, rectum, or endometrium when used with an intrauterine tube.</p> <ul style="list-style-type: none"> <li>• Intrauterine tubes are available in three different lengths and curvatures.</li> <li>• Vaginal cylinders available in five different diameters.</li> <li>• Easy adaptability of the total applicator length.</li> <li>• Excellent reproducibility of the dose distribution.</li> <li>• Radio opaque marker rings are incorporated into the cylinder surface for visualization of the vaginal (or rectal) wall.</li> </ul>
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Consisting of:

Qty #	Part
1	084002 Vaginal Tube
1	084003 Intrauterine Tube, l = 40mm, 15°
1	084004 Intrauterine Tube, l = 60mm, 30°
1	084005 Intrauterine Tube, l = 80mm, 45°
1	084010 Cylinder Locking Pipe
1	084351 4 Cylinder., d = 20mm, with mark
1	084352 4 Cylinder., d = 25mm, with mark
1	084353 4 Cylinder., d = 30mm, with mark
1	084354 4 Cylinder., d = 35mm, with mark
1	084158 Sterilizing Caps, 3.2mm

1	084434	<p><b>Rotte Endometrial Applicator Set, Complete</b>          The applicator is designed for high dose rate treatment of the entire uterus, using two opposed twin intrauterine tubes.</p> <ul style="list-style-type: none"> <li>• Available in four different spread dimensions: 20-50mm. This enables individualized adaptation of the dose distribution to the endometrium.</li> <li>• Easy insertion of the thin applicator tubes (3.2mm diameter).</li> <li>• Applicator can be locked with a single action.</li> <li>• Excellent reproducibility of the treatment dose distribution is guaranteed by the fixed applicator geometry.</li> <li>• Dosimetry can be performed with the help of predetermined dose distributions.</li> </ul>
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Consisting of:

Qty #	Part
1	084435 Basic Rotte Endometrial Applicator Set, 20mm
1	084230 Basic Rotte Endometrial Applicator Set, 32mm

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- | 1     | 045006  | <p>1 084436 Basic Rotte Endometrial Applicator Set, 40mm<br/>         1 084437 Basic Rotte Endometrial Applicator Set, 50mm<br/>         50 084158 Sterilizing Caps, 3.2mm</p> <p><b>Template Set, Breast Implants (complete)</b><br/>         Universal breast template set according to the Paris Dosimetry System. The set includes subsets of single, double and triple plane template pairs with different basal distances. The RABIT holder ensures uniform dosimetry. With this template set all target areas can be covered.<br/>         Consisting of:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Qty #</th> <th style="text-align: left;">Part</th> </tr> </thead> <tbody> <tr><td>1</td><td>045033 RABIT Template Holder</td></tr> <tr><td>1</td><td>045021 Double Plane, 10mm Template Pairs (5)</td></tr> <tr><td>1</td><td>045024 Double Plane, 16mm Template Pairs (5)</td></tr> <tr><td>1</td><td>045026 Triple Plane, 10mm Template Pairs (3)</td></tr> <tr><td>1</td><td>045029 Triple Plane, 16mm Template Pairs (3)</td></tr> </tbody> </table>  | Qty # | Part | 1 | 045033 RABIT Template Holder                          | 1 | 045021 Double Plane, 10mm Template Pairs (5)          | 1 | 045024 Double Plane, 16mm Template Pairs (5)      | 1 | 045026 Triple Plane, 10mm Template Pairs (3)      | 1 | 045029 Triple Plane, 16mm Template Pairs (3)      |   |   |   |  |   |   |   |                                 |   |   |
|-------|---|--|-------|------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---------------------------------|---|---|
| Qty # | Part  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 045033 RABIT Template Holder                          |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 045021 Double Plane, 10mm Template Pairs (5)          |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 045024 Double Plane, 16mm Template Pairs (5)          |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 045026 Triple Plane, 10mm Template Pairs (3)          |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 045029 Triple Plane, 16mm Template Pairs (3)          |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189400  | <p><b>Flexible Implant Tube Set, 6F, 30cm consisting of:</b><br/>         The microSelectron Flexible Nylon Implant tube set 6F (1.9mm) is developed for interstitial brachytherapy where applicator flexibility is required. The Flexible Implant Tubes and buttons are delivered sterile and are packaged in pouches of 6.<br/>         Consisting of:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Qty #</th> <th style="text-align: left;">Part</th> </tr> </thead> <tbody> <tr><td>2</td><td>189300 Flexible Implant Tube, 6F, Single leader, 30cm</td></tr> <tr><td>2</td><td>189298 Flexible Implant Tube, 6F, Double leader, 30cm</td></tr> <tr><td>2</td><td>189296 Flexible Implant Tube, 6F, Blind end, 30cm</td></tr> <tr><td>1</td><td>189282 Radio opaque button white, 6F</td></tr> <tr><td>1</td><td>189284 Radio opaque button black, 6F</td></tr> <tr><td>1</td><td>189286 Radio opaque button red, 6F</td></tr> <tr><td>1</td><td>189288 Radio opaque button blue, 6F</td></tr> <tr><td>1</td><td>189290 Radio opaque button green, 6F</td></tr> <tr><td>1</td><td>189367 Cutter Flexible Implants</td></tr> <tr><td>1</td><td>189437 Leader insertion needle, 1.5x200mm</td></tr> </tbody> </table>   | Qty # | Part | 2 | 189300 Flexible Implant Tube, 6F, Single leader, 30cm | 2 | 189298 Flexible Implant Tube, 6F, Double leader, 30cm | 2 | 189296 Flexible Implant Tube, 6F, Blind end, 30cm | 1 | 189282 Radio opaque button white, 6F              | 1 | 189284 Radio opaque button black, 6F              | 1 | 189286 Radio opaque button red, 6F              | 1 | 189288 Radio opaque button blue, 6F              | 1 | 189290 Radio opaque button green, 6F              | 1 | 189367 Cutter Flexible Implants | 1 | 189437 Leader insertion needle, 1.5x200mm |
| Qty # | Part  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189300 Flexible Implant Tube, 6F, Single leader, 30cm |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189298 Flexible Implant Tube, 6F, Double leader, 30cm |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189296 Flexible Implant Tube, 6F, Blind end, 30cm     |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189282 Radio opaque button white, 6F                  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189284 Radio opaque button black, 6F                  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189286 Radio opaque button red, 6F                    |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189288 Radio opaque button blue, 6F                   |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189290 Radio opaque button green, 6F                  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189367 Cutter Flexible Implants                       |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189437 Leader insertion needle, 1.5x200mm             |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189401  | <p><b>CT/MR Flexible Implant Tube Set, 6F, 30cm consisting of:</b><br/>         The microSelectron Flexible Nylon Implant tube set 6F (1.9mm) is developed for interstitial brachytherapy where applicator flexibility is required and especially for those cases where CT or MR imaging is used. The Flexible Implant Tubes and radiolucent buttons are delivered sterile and are packaged in pouches of 6.<br/>         Consisting of:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Qty #</th> <th style="text-align: left;">Part</th> </tr> </thead> <tbody> <tr><td>2</td><td>189445 CT/MR Flexible Implant Tube, 6F</td></tr> <tr><td>2</td><td>189298 Flexible Implant Tube, 6F, Double leader, 30cm</td></tr> <tr><td>2</td><td>189296 Flexible Implant Tube, 6F, Blind end, 30cm</td></tr> <tr><td>1</td><td>189458 Radio lucent button white, 6F, (box of 72)</td></tr> <tr><td>1</td><td>189460 Radio lucent button black, 6F, (box of 72)</td></tr> <tr><td>1</td><td>189462 Radio lucent button red, 6F, (box of 72)</td></tr> <tr><td>1</td><td>189464 Radio lucent button blue, 6F, (box of 72)</td></tr> <tr><td>1</td><td>189466 Radio lucent button green, 6F, (box of 72)</td></tr> <tr><td>1</td><td>189367 Cutter Flexible Implants</td></tr> <tr><td>1</td><td>189437 Leader insertion needle, 1.5x200mm</td></tr> </tbody> </table> | Qty # | Part | 2 | 189445 CT/MR Flexible Implant Tube, 6F                | 2 | 189298 Flexible Implant Tube, 6F, Double leader, 30cm | 2 | 189296 Flexible Implant Tube, 6F, Blind end, 30cm | 1 | 189458 Radio lucent button white, 6F, (box of 72) | 1 | 189460 Radio lucent button black, 6F, (box of 72) | 1 | 189462 Radio lucent button red, 6F, (box of 72) | 1 | 189464 Radio lucent button blue, 6F, (box of 72) | 1 | 189466 Radio lucent button green, 6F, (box of 72) | 1 | 189367 Cutter Flexible Implants | 1 | 189437 Leader insertion needle, 1.5x200mm |
| Qty # | Part  |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189445 CT/MR Flexible Implant Tube, 6F                |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189298 Flexible Implant Tube, 6F, Double leader, 30cm |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 2     | 189296 Flexible Implant Tube, 6F, Blind end, 30cm     |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189458 Radio lucent button white, 6F, (box of 72)     |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189460 Radio lucent button black, 6F, (box of 72)     |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189462 Radio lucent button red, 6F, (box of 72)       |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189464 Radio lucent button blue, 6F, (box of 72)      |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189466 Radio lucent button green, 6F, (box of 72)     |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189367 Cutter Flexible Implants                       |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |
| 1     | 189437 Leader insertion needle, 1.5x200mm             |  |       |      |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |                                 |   |   |

INITIALS

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Qty	Article Number	Description																										
1	137206	<p><b>Cervix Rotterdam Applicator set 30° (ti)</b></p> <p>The Cervix Rotterdam Applicator set is intended for gynecological brachytherapy treatments of cervix, endometrium and vagina. Its design allows for quick and accurate guided insertion. The fixed geometry provides reproducible positioning and adds to patient safety. The optional integrated vaginal cylinder enhances clinical patient outcome. The Cervix Rotterdam Applicator consists of titanium and heat resistant polymer components, and is CT compatible.</p> <p>Consisting of:</p> <table border="0"> <thead> <tr> <th>Qty #</th> <th>Part</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>137248 Right ovoid tube I, IU-30° (ti)</td> </tr> <tr> <td>1</td> <td>137249 Left ovoid tube III, IU-30° (ti)</td> </tr> <tr> <td>1</td> <td>137191 Ovoid pair, Ø 20mm, S, "Rotterdam" PPSU*</td> </tr> <tr> <td>1</td> <td>137192 Ovoid pair, Ø 25mm, M, "Rotterdam" PPSU*</td> </tr> <tr> <td>1</td> <td>137193 Ovoid pair, Ø 30mm, L, "Rotterdam" PPSU*</td> </tr> <tr> <td>1</td> <td>137251 Intrauterine tube IIIII, IU-30°, L = 30mm, (ti)</td> </tr> <tr> <td>1</td> <td>137253 Intrauterine tube IIIII, IU-30°, L = 50mm, (ti)</td> </tr> <tr> <td>1</td> <td>137255 Intrauterine tube IIIII, IU-30°, L = 70mm, (ti)</td> </tr> <tr> <td>1</td> <td>137256 Ovoid tube coupling for 30°, for ovoids only (ti)</td> </tr> <tr> <td>1</td> <td>137570 Closing caps (for metal applicators) (25/pack) Silicone</td> </tr> <tr> <td>1</td> <td>137574 Screwdriver for ovoid screws Stainless Steel</td> </tr> <tr> <td>1</td> <td>User manual Rotterdam Cervix Applicator Sets</td> </tr> </tbody> </table>	Qty #	Part	1	137248 Right ovoid tube I, IU-30° (ti)	1	137249 Left ovoid tube III, IU-30° (ti)	1	137191 Ovoid pair, Ø 20mm, S, "Rotterdam" PPSU*	1	137192 Ovoid pair, Ø 25mm, M, "Rotterdam" PPSU*	1	137193 Ovoid pair, Ø 30mm, L, "Rotterdam" PPSU*	1	137251 Intrauterine tube IIIII, IU-30°, L = 30mm, (ti)	1	137253 Intrauterine tube IIIII, IU-30°, L = 50mm, (ti)	1	137255 Intrauterine tube IIIII, IU-30°, L = 70mm, (ti)	1	137256 Ovoid tube coupling for 30°, for ovoids only (ti)	1	137570 Closing caps (for metal applicators) (25/pack) Silicone	1	137574 Screwdriver for ovoid screws Stainless Steel	1	User manual Rotterdam Cervix Applicator Sets
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1	User manual Rotterdam Cervix Applicator Sets																											
1	137400	<p><b>Ti Vaginal Cylinder Applicator Set consisting of:</b></p> <p>The Vaginal Applicator is an easy to use applicator for intracavitary treatment. When used with intrauterine tube, the Vaginal Applicator is also offers a simple solution for treatment of the cervix, rectum or endometrium. The embedded markers are integrated in to the cylinder material, thereby supporting visualization of the inserted applicator while minimizing contamination risk. The set is available in a range of different diameters and curvatures of the intrauterine tube, to provide individually optimized treatment options and dose distribution.</p> <p>Consisting of:</p> <table border="0"> <thead> <tr> <th>Qty #</th> <th>Part</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>137194 Cylinder Set, d= 20 mm</td> </tr> <tr> <td>1</td> <td>137195 Cylinder Set, d= 25 mm</td> </tr> <tr> <td>1</td> <td>137196 Cylinder Set, d= 30 mm</td> </tr> <tr> <td>1</td> <td>137416 Intra-vaginal applicator tube (ti)</td> </tr> <tr> <td>1</td> <td>137402 IV-IU tube 40 (ti)</td> </tr> <tr> <td>1</td> <td>137403 IV-IU tube 60 (ti)</td> </tr> <tr> <td>1</td> <td>137404 IV-IU tube 80 (ti)</td> </tr> <tr> <td>1</td> <td>137401 Perineal bar</td> </tr> <tr> <td>1</td> <td>137415 Spring lock Tube (ti)</td> </tr> <tr> <td>1</td> <td>137570 Closing caps set</td> </tr> </tbody> </table>	Qty #	Part	1	137194 Cylinder Set, d= 20 mm	1	137195 Cylinder Set, d= 25 mm	1	137196 Cylinder Set, d= 30 mm	1	137416 Intra-vaginal applicator tube (ti)	1	137402 IV-IU tube 40 (ti)	1	137403 IV-IU tube 60 (ti)	1	137404 IV-IU tube 80 (ti)	1	137401 Perineal bar	1	137415 Spring lock Tube (ti)	1	137570 Closing caps set				
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1	137415 Spring lock Tube (ti)																											
1	137570 Closing caps set																											
1	110018	<p><b>Henschke Ti Applicator Set</b></p> <p>The Henschke Applicator has hemispherical colpostats with integrated tungsten alloy shielding for dose reduction in bladder and rectum.</p> <ul style="list-style-type: none"> <li>• Plastic caps to increase the diameter of the ovoids.</li> <li>• Dual ovoid tube assembly incorporates an adjustable ovoid separation and shielding.</li> </ul> <p>Consisting of:</p> <table border="0"> <thead> <tr> <th>Qty #</th> <th>Part</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>110019 Dual Colpostat tube (ovoid tube 1 and 2 and fixation mechanism)</td> </tr> </tbody> </table>	Qty #	Part	1	110019 Dual Colpostat tube (ovoid tube 1 and 2 and fixation mechanism)																						
Qty #	Part																											
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- 1 110435 Intrauterine tube straight
- 1 110436 Intrauterine tube 15°
- 1 110437 Intrauterine tube 30°
- 1 110438 Intrauterine tube 45°
- 2 110430 Cervical Stopper
- 1 084158 Set of 50 Sterilization Caps Silicone
- 5 008033 Adjusting Screw (spare for cervical stopper)
- 1 065085 Colpostat Cap Ø25 (pair)
- 1 065086 Colpostat Cap Ø30 (pair)
- 2 110283 Titanium Screwdriver for stopper

1 137070

**GYN Applicator X-ray Marker Set 1, 3, 5 300mm consisting of:**

X-ray marker set required for microSelectron and Flexitron to make a treatment plan for the titanium gynecological applicators when using X-ray and the microSelectron or Flexitron afterloader. The coded markers enable each catheter to be identified and easily reconstructed for treatment planning.

1 137063

**Transfer Tubes Set (Flexitron) For Gynecological (Ti) Applicators**

Set of transfer tubes for gynecological titanium applicators, keyed for channel 1, 3 & 5 (black)

INITIALS

Page: 16

*All terms, conditions, pricing, product, and service information must remain confidential and should not be disclosed.*

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## Příloha č. 2

## Soupis jednotlivých prvků zařízení

<b>Položka</b>	<b>Cena za 1 položku (Kč bez DPH)</b>	<b>Počet položek</b>	<b>Celková cena (Kč bez DPH)</b>
Brachyterapeutický systém (dále jen "zařízení")	7 868 366,00 Kč	1 kus	7 868 366,00 Kč
Dodávka zařízení	- Kč	dle smlouvy	- Kč
Instalace a uvedení zařízení do provozu	135 000,00 Kč	dle smlouvy	135 000,00 Kč
Provedení přijímací zkoušky	35 000,00 Kč	dle smlouvy	35 000,00 Kč
Instruktaž	24 000,00 Kč	dle smlouvy	24 000,00 Kč
Odborná údržba zařízení	34 425,00 Kč	dle smlouvy	34 425,00 Kč
Provádění upgrade a update SW zařízení	- Kč	dle smlouvy	- Kč
Radionuklidový zdroj	225 209,00 Kč	1	225 209,00 Kč
<b>Celková cena (Kč bez DPH)</b>			<b>8 322 000,00 Kč</b>



**AMIS\*PACS FlexServer G2**  
version 2.13.03-REL, released 2015-02-01

**DICOM Conformance Statement**

ICZ a.s.



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## **AMIS\*PACS FlexServer G2: DICOM Conformance Statement**

version 2.13.03-REL, released 2015-02-01

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**140 00 Praha 4 - Nusle**

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# INTRODUCTION

This is the DICOM 3.0 Conformance Statement for AMIS\*PACS FlexServer G2 software produced by ICZ a.s.

## 1. REVISION HISTORY

Date	Document Internal Revision	APFS Product Release	Major changes
2015-02-01	2.13@{2015-02-01}	2.12.03-REL	APFS released
2014-12-01	2.12@{2014-12-01}	2.12.04-REL	APFS released
2014-09-08	master@{2014-09-08}	no public release	Change Implementation Version Name
2014-07-30	2.11@{2014-07-30}	2.11.04-REL	APFS released
2014-04-01	master@{2014-04-01}	no public release	1.2.840.10008.1.2.4.102 (MPEG-4 AVC/H.264 High Profile / Level 4.1) Transfer Syntax added
2014-03-31	master@{2014-03-31}	no public release	More matching keys in Worklist C-FIND
2014-03-18	2.10@{2014-03-18}	2.10.04-REL	APFS released
2014-02-06	2.9@{2014-02-06}	2.09.05-REL	APFS released
2013-11-02	2.8@{2013-11-02}	2.08.05-REL	APFS released
2013-09-23	2.7@{2013-09-23}	2.07.08-REL	APFS released
2013-08-29	2.7@{2013-08-29}	2.07.06-REL	APFS released
2013-08-20	2.7@{2013-08-20}	no public release	Text unchanged. The revision number system changed as a consequence of migration of the source code repository.
2013-06-19	2.130.00	2.06.05-REL	APFS released
2013-04-06	2.104.03	2.05.07-REL	APFS released
2013-02-07	2.86.00	no public release	C-FIND SCU supports Number of Study Related Series and Number of Study Related Instances. Many typos fixed.
2013-02-07	2.83.03-p1	2.04.07-REL	APFS released
2012-11-30	2.83.03	2.04.05-REL	APFS released
2012-09-06	2.67.00	no public release	C-FIND SCP supports Series Description
2012-07-02	2.65.00	2.03.07-REL	APFS released
2012-05-24	2.51.00	no public release	C-FIND SCP supports Number of Study Related Series and Number of Study Related Instances
2012-05-24	2.50.00	no public release	C-FIND and C-MOVE SCU added
2012-04-30	2.45.00	2.02.07-REL	APFS released
2012-01-13	2.32.00	2.01.08-REL	APFS released
2011-07-20	2.18.00	2.00.08-REL	APFS released
2011-05-20	2.14.00	no public release	Implementation Class UID changed

<b>Date</b>	<b>Document Internal Revision</b>	<b>APFS Product Release</b>	<b>Major changes</b>
2011-02-07	0.48.00	no public release	initial text

## 2. AUDIENCE

This document is intended for hospital staff, health system integrators, software designers or implementers. It is assumed that the reader has a working understanding of DICOM.

## 3. REMARKS

DICOM does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between applications supporting the same DICOM functionality.

This Conformance Statement is not intended to replace validation with other DICOM equipment to ensure compatibility.

## 4. DEFINITIONS, TERMS AND ABBREVIATIONS

*APFS* refers to *AMIS\*PACS FlexServer G2*.

*Service Guide* refers to the *AMIS\*PACS FlexServer G2 - Service Guide* manual distributed with APFS.

*Administrator Guide* refers to the *AMIS\*PACS FlexServer G2 - Administrator Guide* manual distributed with APFS.

*User Guide* refers to the *AMIS\*PACS FlexServer G2 - User Guide* manual distributed with APFS.

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# Chapter 1. CONFORMANCE STATEMENT OVERVIEW

APFS is software intended to run as an archive of medial images and worklist server. It is based on the DICOM v3.0 standard.

## 1.1. NETWORK SERVICES

The following table provides an overview of the network services supported by APFS

### 1.1.1. Transfer

**Table 1.1. Network services**

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Computed Radiography Image Storage	Yes	Yes
Basic Study Content Notification SOP Class (Retired)	Yes	Yes
Stored Print Storage SOP Class (Retired)	Yes	Yes
Hardcopy Grayscale Image Storage SOP Class (Retired)	Yes	Yes
Hardcopy Color Image Storage SOP Class (Retired)	Yes	Yes
Computed Radiography Image Storage	Yes	Yes
Digital X-Ray Image Storage – For Presentation	Yes	Yes
Digital X-Ray Image Storage – For Processing	Yes	Yes
Digital Mammography X-Ray Image Storage – For Presentation	Yes	Yes
Digital Mammography X-Ray Image Storage – For Processing	Yes	Yes
Digital Intra-oral X-Ray Image Storage – For Presentation	Yes	Yes
Digital Intra-oral X-Ray Image Storage – For Processing	Yes	Yes
Standalone Modality LUT Storage (Retired)	Yes	Yes
Encapsulated PDF Storage	Yes	Yes
Standalone VOI LUT Storage	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	Yes	Yes
Color Softcopy Presentation State Storage SOP Class	Yes	Yes
Pseudo-Color Softcopy Presentation State Storage SOP Class	Yes	Yes
Blending Softcopy Presentation State Storage SOP Class	Yes	Yes
X-Ray Angiographic Image Storage	Yes	Yes
Enhanced XA Image Storage	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	Yes	Yes
Enhanced XRF Image Storage	Yes	Yes
X-Ray Angiographic Bi-Plane Image Storage (Retired)	Yes	Yes
Positron Emission Tomography Image Storage	Yes	Yes
Standalone PET Curve Storage (Retired)	Yes	Yes

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SOP Classes	User of Service (SCU)	Provider of Service (SCP)
CT Image Storage	Yes	Yes
Enhanced CT Image Storage	Yes	Yes
Nuclear Medicine Image Storage	Yes	Yes
Ultrasound Multi-frame Image Storage (Retired)	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
MR Image Storage	Yes	Yes
Enhanced MR Image Storage	Yes	Yes
MR Spectroscopy Storage	Yes	Yes
RT Image Storage	Yes	Yes
RT Dose Storage	Yes	Yes
RT Structure Set Storage	Yes	Yes
RT Beams Treatment Record Storage	Yes	Yes
RT Plan Storage	Yes	Yes
RT Brachy Treatment Record Storage	Yes	Yes
RT Treatment Summary Record Storage	Yes	Yes
Nuclear Medicine Image Storage (Retired)	Yes	Yes
Ultrasound Image Storage (Retired)	Yes	Yes
Ultrasound Image Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Spatial Registration Storage	Yes	Yes
Spatial Fiducials Storage	Yes	Yes
Real World Value Mapping Storage	Yes	Yes
Secondary Capture Image Storage	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	Yes	Yes
VL Endoscopic Image Storage	Yes	Yes
Video Endoscopic Image Storage	Yes	Yes
VL Microscopic Image Storage	Yes	Yes
Video Microscopic Image Storage	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	Yes	Yes
VL Photographic Image Storage	Yes	Yes
Video Photographic Image Storage	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	Yes	Yes
Stereometric Relationship Storage	Yes	Yes
Standalone Overlay Storage (Retired)	Yes	Yes

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SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Basic Text SR Storage	Yes	Yes
Enhanced SR Storage	Yes	Yes
Comprehensive SR Storage	Yes	Yes
Procedure Log Storage	Yes	Yes
Mammography CAD SR Storage	Yes	Yes
Key Object Selection Document Storage	Yes	Yes
Chest CAD SR Storage	Yes	Yes
X-Ray Radiation Dose SR Storage	Yes	Yes
Standalone Curve Storage (Retired)	Yes	Yes
12-lead ECG Waveform Storage	Yes	Yes
General ECG Waveform Storage	Yes	Yes
Ambulatory ECG Waveform Storage	Yes	Yes
Hemodynamic Waveform Storage	Yes	Yes
Cardiac Electrophysiology Waveform Storage	Yes	Yes
Basic Voice Audio Waveform Storage	Yes	Yes
Hanging Protocol Storage	Yes	Yes
CSA Non-Image Storage ( <i>widely used private SOP class</i> )	Yes	Yes

## 1.1.2. Query/Retrieve

**Table 1.2. Network services**

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Patient Root Query/Retrieve Information Model – FIND	No	Yes
Patient Root Query/Retrieve Information Model – MOVE	No	Yes
Study Root Query/Retrieve Information Model – FIND	Yes	Yes
Study Root Query/Retrieve Information Model – MOVE	Yes	Yes

## 1.1.3. Workflow Management

**Table 1.3. Network services**

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Modality Worklist Information Model – FIND	No	Yes
Storage Commitment Push Model	No	Yes

## 1.1.4. Print Management

Table 1.4. Network services

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Not Applicable		

## 1.2. MEDIA SERVICES

APFS supports no media services.

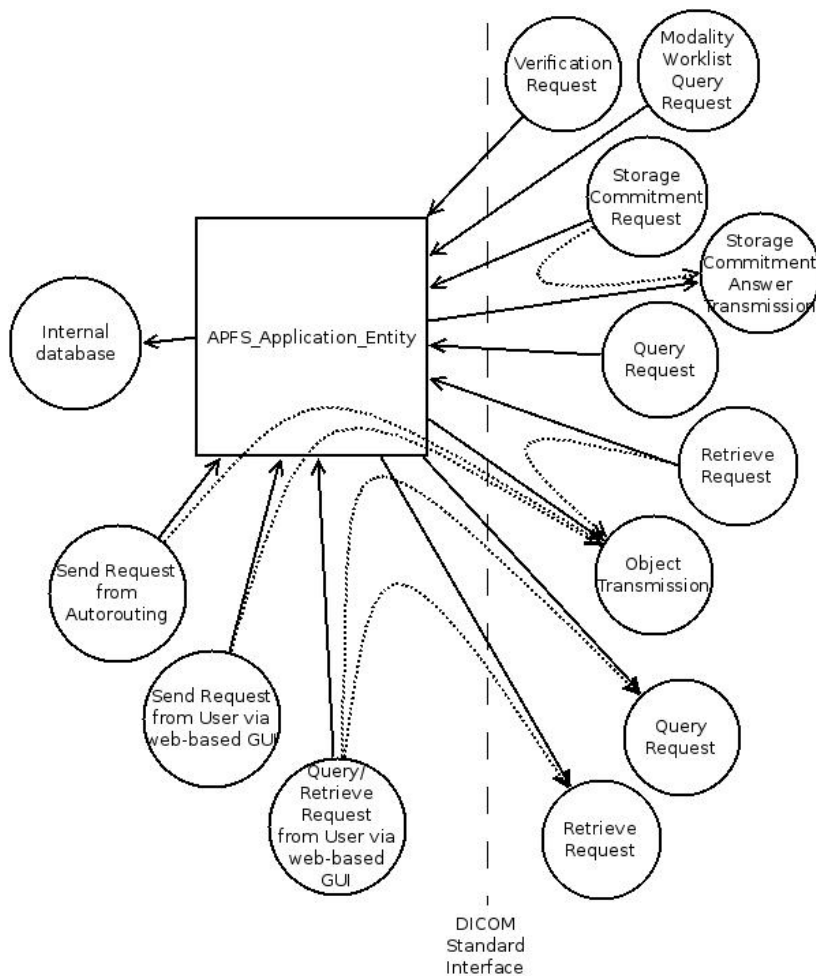
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# Chapter 2. NETWORKING

## 2.1. IMPLEMENTATION MODEL

### 2.1.1. Application Data Flow

Figure 2.1. Functional overview



APFS contains one Application Entity:

- *APFS\_Application\_Entity* which
  - stores medical images and provides query and retrieve services
  - provides modality worklist service based on HL7 messages received from a HIS/RIS system
  - provides storage commitment service based on stored medical images
  - an user of APFS' web-based GUI can invoke
    - object transmissions to other applications entities on a network

- query requests to other applications entities on a network
- retrieve requests to other applications entities on a network
- transfers objects to other applications entities on a network when an internal configurable rules decide (so called *autorouting*)

## 2.1.2. Functional Definition of AEs

APFS contains a single application entity (APFS\_Application\_Entity depicted in the Application Data Flow diagram above). It implements:

- the Storage Service Classes
  - as a SCP to receive composite objects from remote application entities (source AEs). It stores them to an internal database.
  - as a SCU to send stored composite objects to remote application entities (destination AEs)
- the Query/Retrieve Service Classes
  - as a SCP it serves queries and retrieve requests from remote application entities
 

This service is based on the internal database mentioned above. The relevant data originates from

    - composite objects received when acting as the Storage Service Classes SCP
    - patient information received via HL7 messages from a HIS/RIS system
  - as a SCU it can query and retrieve data from remote application entities
- the Workflow Management Service Classes
  - as a Modality Worklist SCP it answers queries from remote application entities (modalities)
 

This service is based the internal database mentioned above. The only relevant data for this service class is:

    - patient information received via HL7 messages from a HIS/RIS system
  - as a Storage Commitment SCP it answers queries from remote application entities (modalities)
 

This service is based the internal database mentioned above. The only relevant data for this service class is:

    - composite objects received when acting as the Storage Service Classes SCP
- the Verification Service Class
  - as a SCP it confirms verification requests from remote application entities

## 2.1.3. Sequencing of Real-World Activities

APFS Application Entity initiates a transmission of composite objects to a remote application entity when:

- as a Query/Retrieve SCP receives a retrieve request from a remote application entity
- instructed by an user of the web-based graphical user interface to send data to a remote application entity<sup>1</sup>

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<sup>1</sup>For details of the web GUI see User Guide

- internal autorouting mechanism detects a plan to transfer a composite object to a remote application entity<sup>2</sup>

APFS Application Entity initiates a Query/Retrieve when:

- instructed by an user of the web-based graphical user interface to query/retrieve a remote application entity<sup>3</sup>

APFS Application Entity initiates a Storage Commitment answer transmission when:

- as a Storage Commitment SCP receives a Storage Commitment request from a remote application entity

## 2.2. AE SPECIFICATIONS

### 2.2.1. APFS\_Application\_Entity

#### 2.2.1.1. SOP Classes

APFS\_Application\_Entity provides Standard Conformance to the following SOP Classes:

**Table 2.1. Storage SOP Classes for APFS\_Application\_Entity**

SOP Class Name	SOP Class UID	SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
Basic Study Content Notification SOP Class (Retired)	1.2.840.10008.1.9	Yes	Yes
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	Yes
Hardcopy Grayscale Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.29	Yes	Yes
Hardcopy Color Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.30	Yes	Yes
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	Yes
Digital Mammography X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes
Digital Mammography X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes
Digital Intra-oral X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	Yes
Digital Intra-oral X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	Yes
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes
Standalone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	Yes

<sup>2</sup>For details of the autorouting mechanism see Service Guide

<sup>3</sup>For details of the web GUI see User Guide

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SOP Class Name	SOP Class UID	SCU	SCP
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	Yes	Yes
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	Yes
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	Yes
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	Yes
Standalone PET Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	Yes
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	Yes
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Yes	Yes
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	Yes
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Yes	Yes
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Yes	Yes
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	Yes
Standalone Overlay Storage (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	Yes
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Yes	Yes
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Yes	Yes
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Yes	Yes
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	Yes	Yes
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Yes	Yes
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Yes	Yes
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Yes	Yes
Standalone Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	Yes
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	Yes
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	Yes	Yes
CSA Non-Image Storage ( <i>widely used private SOP class</i> )	1.3.12.2.1107.5.9.1	Yes	Yes

**Table 2.2. Query/Retrieve SOP Classes for APFS\_Application\_Entity**

SOP Class Name	SOP Class UID	SCU	SCP
Patient Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Patient Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	No	Yes
Study Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes

**Table 2.3. Workflow management SOP Classes for APFS\_Application\_Entity**

SOP Class Name	SOP Class UID	SCU	SCP
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	No	Yes
Storage Commitment Push Model	1.2.840.10008.1.20.1	No	Yes

**Table 2.4. Verification SOP Classes for APFS\_Application\_Entity**

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes

## 2.2.1.2. Association Policies

### 2.2.1.2.1. General

The DICOM standard application context name for DICOM 3.0 is always proposed:

**Table 2.5. DICOM Application Context for APFS\_Application\_Entity**

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

SOP Class extended negotiation is not supported.

Max PDU sizes offered and accepted are 16384.

### 2.2.1.2.2. Number of Associations

The number of simultaneous associations that will be accepted as a SCP and/or initiated as a SCU is not limited in principle.

APFS\_Application\_Entity spawns a new thread:

- (as a SCP) for each connection request from a source AE it receives
- (as a SCU) for each destination AE it has to send composite instances or storage commitment answers to

Therefore, APFS\_Application\_Entity can have multiple simultaneous connections, and there are no inherent limitations on the number of simultaneous associations that it can maintain.

Actually, there are practical limits of simultaneous associations determined by the underlying software environment, the operating system and the hardware itself.

### 2.2.1.2.3. Asynchronous Nature

Asynchronous communication is not supported.

### 2.2.1.2.4. Implementation Identifying Information

The implementation information for APFS\_Application\_Entity is:

**Table 2.6. DICOM Implementation Class and Version for APFS\_Application\_Entity**

Implementation Class UID	1.3.6.1.4.1.20744.3.1.2.2.9001
--------------------------	--------------------------------

Implementation Version Name	APFS-X.YY.ZZ-REL
-----------------------------	------------------

where *x.yy.zz* is an release number of APFS (e.g. 2.10.12).

### 2.2.1.3. Association Initiation Policy

APFS\_Application\_Entity initiates:

- an association aimed to send composite instances when:
  - it needs to store composite instances as a sub-operation of a retrieve request from a remote application entity
  - an user of the web-based GUI instructs APFS to send data to a remote application entity
  - the internal autorouting mechanism detects a plan to transfer a composite object to a remote application entity

All events listed above trigger the same sequence of actions and the mechanism of an association initiation is the same. Therefore, all three activities ("Retrieve request", "User instruction", "Autorouting instruction") will be described together with differences explicitly noted.

- an association aimed to query/retrieve when:
  - an user of the web-based GUI instructs APFS to query/retrieve to a remote application entity
- an association aimed to send storage commitment answers when:
  - it receives a storage commitment request

#### 2.2.1.3.1. Real-world activities - Retrieve request or User instruction or Autorouting instruction

##### 2.2.1.3.1.1. Description and Sequencing of Activities

When requested by any of these:

- by a remote application entity with a C-MOVE (Retrieve request)
- by user's action in the web-based GUI
- by the internal autorouting mechanism

APFS:

1. builds a list of UIDs of composite objects to send
2. collects SOP Classes of those composite objects
3. initiates an association to a destination application entity
4. sends the selected composite objects to the destination using C-STORE
5. if triggered by a C-MOVE request: for each C-STORE performed APFS\_Application\_Entity notifies C-MOVE requester about C-STORE status
6. closes the association

### 2.2.1.3.1.2. Proposed Presentation Contexts

**Table 2.7. Proposed Presentation Contexts by APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
See note 1 below	See note 1 below	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
See note 1 below	See note 1 below	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
See note 1 below	See note 1 below	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
See note 1 below	See note 1 below	Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99	SCU	None
See note 1 below	See note 1 below	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
See note 1 below	See note 1 below	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
See note 1 below	See note 1 below	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
See note 1 below	See note 1 below	JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
See note 1 below	See note 1 below	JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
See note 1 below	See note 1 below	JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80	SCU	None
See note 1 below	See note 1 below	JPEG-LS Lossy (Near-Lossless) Image Compression	1.2.840.10008.1.2.4.81	SCU	None
See note 1 below	See note 1 below	JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90	SCU	None
See note 1 below	See note 1 below	JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	SCU	None
See note 1 below	See note 1 below	MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100	SCU	None
See note 1 below	See note 1 below	MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102	SCU	None

#### Note

1. The Abstract Syntax Name and UID correspond to one of the SOP Class Names and UIDs supported (see Table Storage SOP Classes for APFS\_Application\_Entity above).

APFS\_Application\_Entity proposes a set of presentation contexts, one or two presentation contexts for each SOP class. The first presentation context contains:

- the SOP Class UID as the proposed Abstract Syntax
- the Transfer Syntax 1.2.840.10008.1.2 (Implicit VR Little Endian) as the proposed Transfer Syntax

The second presentation context, if present, contains:

- the SOP Class UID as the proposed Abstract Syntax
- one of the transfer syntaxes from the table above, except 1.2.840.10008.1.2 (Implicit VR Little Endian), as the proposed Transfer Syntaxes

The set of the proposed Abstract Syntaxes (SOP Class UIDs) is a subset of SOP Classes supported. It is the minimal subset needed to transfer all composite objects selected to be sent.

**2.2.1.3.1.3. SOP Specific Conformance for SOP Classes**

After a successful C-STORE response from the SCP (the destination application entity), APFS\_Application\_Entity will continue to send composite instances. Warnings in the C-STORE response from the SCP are ignored.

If an unsuccessful C-STORE response is received from the SCP, APFS\_Application\_Entity will log the failure and close the association.

In case of an exception (an association aborted by the SCP, a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

APFS\_Application\_Entity modifies patient information in the composite instances being sent (in a C-STORE command) with the current information kept in the internal database. The SOP Instance UID stays unchanged. The attributes updated are listed in the following table:

**Table 2.8. Attributes updated in instances being sent**

Attribute Name	Tag	Attribute Description
Patient ID	(0010,0020)	Primary ID of the patient
Issuer of Patient ID	(0010,0021)	This attribute is either removed or set to the namespace of primary patients' IDs (as configured to APFS). The behaviour is configurable.
Patient's Birth Date	(0010,0030)	Birth date of the patient
Patient's Birth Time	(0010,0032)	Birth time of the patient
Patient's Sex	(0010,0040)	Sex of the patient
Other Patient IDs Sequence	(0010,1002)	Depending on the actual configuration, this attribute is either: <ul style="list-style-type: none"> <li>• left intact or</li> <li>• removed or</li> <li>• replaced with current patient's identifiers from the repository or</li> <li>• supplemented with current patient's identifiers from the repository</li> </ul>

**2.2.1.3.2. Real-world activities - User instruction to query a remote application**

**2.2.1.3.2.1. Description and Sequencing of Activities**

When requested by user's action in the web-based GUI, then APFS:

1. initiates an association to query a remote application entity

2. sends a C-FIND request
3. receives C-FIND response messages
4. closes the association

**2.2.1.3.2.2. Proposed Presentation Contexts**

**Table 2.9. Proposed Presentation Contexts by APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Study Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

APFS\_Application\_Entity proposes only one presentation context. The presentation context contains:

- the SOP Class UID 1.2.840.10008.5.1.4.1.2.2.1 (Study Root Query/Retrieve Information Model – FIND)
- the Transfer Syntax 1.2.840.10008.1.2 (Implicit VR Little Endian) as the proposed Transfer Syntax

**2.2.1.3.2.3. SOP Specific Conformance for SOP Classes**

APFS\_Application\_Entity always use the value "STUDY" for the Query/Retrieve Level (0008,0052).

APFS\_Application\_Entity supports the following Optional Keys:

**Table 2.10. Supported Optional Keys in C-FIND**

Description	Tag
Patient’s Birth Date	(0010,0030)
Patient’s Sex	(0010,0040)
Modalities in Study	(0008,0061)
Referring Physician’s Name	(0008,0090)
Study Description	(0008,1030)
Number of Study Related Series	(0020,1206)
Number of Study Related Instances	(0020,1208)

Depending on query parameters given by the user, APFS\_Application\_Entity

- either does not use Specific Character Set (0008,0005) at all
- or sets Specific Character Set (0008,0005) to ISO\_IR 192

(In details: When the parameters contains only ASCII characters then Specific Character Set (0008,0005) is not use. Otherwise, APFS\_Application\_Entity submits two C-FIND queries:

- one query with Specific Character Set (0008,0005) to ISO\_IR 192 and with the parameters as specified by the user
- one query without Specific Character Set (0008,0005) and with "asciified" parameters

)

### 2.2.1.3.3. Real-world activities - User instruction to retrieve from a remote application

#### 2.2.1.3.3.1. Description and Sequencing of Activities

When requested by user's action in the web-based GUI, then APFS:

1. initiates an association to retrieve from a remote application entity
2. sends a C-MOVE request
3. receives C-MOVE response messages
4. closes the association

#### 2.2.1.3.3.2. Proposed Presentation Contexts

**Table 2.11. Proposed Presentation Contexts by APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Study Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

For a retrieve request, APFS\_Application\_Entity proposes only one presentation context. The presentation context contains:

- the SOP Class UID 1.2.840.10008.5.1.4.1.2.2.1 (Study Root Query/Retrieve Information Model – MOVE)
- the Transfer Syntax 1.2.840.10008.1.2 (Implicit VR Little Endian) as the proposed Transfer Syntax

#### 2.2.1.3.3.3. SOP Specific Conformance for SOP Classes

APFS\_Application\_Entity provides standard conformance.

### 2.2.1.3.4. Real-world activities - Storage Commitment request

#### 2.2.1.3.4.1. Description and Sequencing of Activities

When requested by a remote application entity with a Storage Commitment N-ACTION request, APFS:

1. builds a list of UIDs of composite objects and their SOP classes to announce a commitment or failure
2. initiates an association to the requesting application entity
3. sends the storage commitment answer (using a N-EVENT-REPORT request) to the requesting application entity
4. closes the association

#### 2.2.1.3.4.2. Proposed Presentation Contexts

**Table 2.12. Proposed Presentation Contexts by APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

**2.2.1.3.4.3. SOP Specific Conformance for SOP Classes**

APFS\_Application\_Entity provides standard conformance to the DICOM Storage Commitment Push Model Service Class as SCP.

SCP Notifications Statement:

- APFS does not support the optional Storage Media File-Set ID & UID Attributes in the N-EVENT-REPORT.
- APFS does not use the optional Retrieve AE Title (0008,0054) Attribute in the NEVENT- REPORT.

**2.2.1.4. Association Acceptance Policy**

APFS\_Application\_Entity accepts associations from registered application entities. This registration is performed by an administrator using a web-based GUI.

Associations are accepted for these purposes:

- to allow remote application entities to verify communication
- to allow remote application entities to store composite instances to the internal database
- to allow remote application entities to query composite instances the internal database
- to allow remote application entities to retrieve composite instances from the internal database
- to allow remote application entities to obtain modality worklist from the internal database
- to allow remote application entities to request storage commitment

**2.2.1.4.1. Real-world activity - Verification request**

**2.2.1.4.1.1. Description and Sequencing of Activities**

APFS\_Application\_Entity accepts an association from a remote application entity to verify communication using C-ECHO.

**2.2.1.4.1.2. Accepted Presentation Contexts**

**Table 2.13. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

**2.2.1.4.1.3. SOP Specific Conformance**

APFS\_Application\_Entity provides standard conformance.

**2.2.1.4.1.4. Presentation Context Acceptance Criterion**

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

**2.2.1.4.1.5. Transfer Syntax Selection Policies**

APFS\_Application\_Entity supports only the Implicit VR Little Endian transfer syntax.

## 2.2.1.4.2. Real-world activity - Store request

### 2.2.1.4.2.1. Description and Sequencing of Activities

APFS\_Application\_Entity accepts an association from a source application entity to store composite instances using C-STORE.

### 2.2.1.4.2.2. Accepted Presentation Contexts

**Table 2.14. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
See note 1 below	See note 1 below	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
See note 1 below	See note 1 below	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
See note 1 below	See note 1 below	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
See note 1 below	See note 1 below	Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99	SCP	None
See note 1 below	See note 1 below	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
See note 1 below	See note 1 below	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCP	None
See note 1 below	See note 1 below	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
See note 1 below	See note 1 below	JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCP	None
See note 1 below	See note 1 below	JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
See note 1 below	See note 1 below	JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80	SCP	None
See note 1 below	See note 1 below	JPEG-LS Lossy (Near-Lossless) Image Compression	1.2.840.10008.1.2.4.81	SCP	None
See note 1 below	See note 1 below	JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90	SCP	None
See note 1 below	See note 1 below	JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	SCP	None
See note 1 below	See note 1 below	MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100	SCP	None
See note 1 below	See note 1 below	MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102	SCP	None

**Note**

1. The Abstract Syntax Name and UID correspond to one of the SOP Class Names and UIDs supported (see Table Storage SOP Classes for APFS\_Application\_Entity above).

APFS\_Application\_Entity may be configured to accept only a subset of all SOP Classes listed above. Moreover, for each acceptable SOP Class, it can be configured to accept only a subset of transfer syntaxes listed above.

If offered a choice of Transfer Syntaxes in the accepted Presentation Contexts, APFS\_Application\_Entity will select the first one supported from the list of proposed Transfer Syntaxes.

**2.2.1.4.2.3. SOP Specific Conformance**

APFS\_Application\_Entity provides Level 2 (Full) conformance to the Storage SOP Classes.

APFS\_Application\_Entity

- does not discard or change any elements
- does not validate that the Attributes of the SOP Instance meet the requirements of the IOD

The following table summarizes storage status codes returned to the source application entity:

**Table 2.15. APFS\_Application\_Entity C-STORE Response Status**

Service Status	Further Meaning	Error Code	Reason
Success	Success	0000	The instance has been stored to the internal database
Refused	Out of Resources	A700	IO error while receiving the object
Refused	Out of Resources	A701	Error while saving the object
Refused	Out of Resources	A702	Error in a requested preprocessing plugin
Refused	Out of Resources	A703	Error in a requested postprocessing plugin
Refused	Out of Resources	A704	Error in a management repository
Refused	Out of Resources	A705	Unknown peer
Refused	Out of Resources	A706	Peer not authorized to store
Refused	Out of Resources	A900	Data Set does not match SOP Class
Error	Cannot understand	C000	Failed to decode the object
Error	Cannot understand	C001	Aborted while receiving the object
Error	Cannot understand	C002	An identifier mismatches an existing record
Error	Cannot understand	C003	Object is not valid
Error	Cannot understand	C004	Object's SOP Instance UID mismatches Affected SOP Instance UID in the C-STORE request

When applicable, the optional attribute (0000,0902) Error Comment is used to supplement information about unsuccessful C-STORE operation.

In case of an exception (a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

**2.2.1.4.2.4. Presentation Context Acceptance Criterion**

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

**2.2.1.4.2.5. Transfer Syntax Selection Policies**

APFS\_Application\_Entity accepts the first supported transfer syntax.

**2.2.1.4.3. Real-world activity - Query request**

**2.2.1.4.3.1. Description and Sequencing of Activities**

APFS\_Application\_Entity accepts an association from a source application entity to query internal database about stored SOP instances using C-FIND.

**2.2.1.4.3.2. Accepted Presentation Contexts**

**Table 2.16. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Patient Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Patient Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
Study Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Study Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

APFS\_Application\_Entity may be configured to accept only a subset of all SOP Classes listed above. Moreover, for each acceptable SOP Class, it can be configured to accept only a subset of transfer syntaxes listed above.

If offered a choice of Transfer Syntaxes in the accepted Presentation Contexts, APFS\_Application\_Entity will select the first one supported from the list of proposed Transfer Syntaxes.

**2.2.1.4.3.3. SOP Specific Conformance**

APFS\_Application\_Entity does not support relational queries.

APFS\_Application\_Entity returns also the attribute (0008,0054) "Retrieve AE Title" set to its own AE Title.

Case sensitivity/insensitivity and diacritics sensitivity/insensitivity in matching are configurable.

APFS\_Application\_Entity can be configured to limit the number of matching instances. If the query being processed exceeds the limit number then the services status returned will be response will be Refused: Out of Resources (Error Code A700).

The following table lists the supported matching and returned keys:

**Table 2.17. Keys supported for Patient Root Information Model**

Level	Attribute name	Tag	Matching	Returned
PATIENT	Patient's Name	(0010,0010)	X	X
PATIENT	Patient ID	(0010,0020)	X	X
PATIENT	Patient's Birth Date	(0010,0030)	X	X
PATIENT	Patient's Birth Time	(0010,0032)	X	X
PATIENT	Patient's Sex	(0010,0040)	X	X
STUDY	Study Date	(0008,0020)	X	X
STUDY	Study Time	(0008,0030)	X	X
STUDY	Accession Number	(0008,0050)	X	X
STUDY	Modalities in Study	(0008,0061)	X	X
STUDY	Referring Physician's Name	(0008,0090)	X	X
STUDY	Study Description	(0008,1030)	X	X
STUDY	Study Instance UID	(0020,000D)	X	X
STUDY	Study ID	(0020,0010)	X	X
STUDY	Number of Study Related Series	(0020,1206)		X
STUDY	Number of Study Related Instances	(0020,1208)		X
SERIES	Series Date	(0008,0021)		X
SERIES	Series Time	(0008,0031)		X
SERIES	Modality	(0008,0060)	X	X
SERIES	Series Description	(0008,103E)		X
SERIES	Body Part Examined	(0018,0015)		X
SERIES	Performing Physician's Name	(0008,1050)		X
SERIES	Patient Position	(0018,5100)		X
SERIES	Series Instance UID	(0020,000E)	X	X
SERIES	Series Number	(0020,0011)	X	X
SERIES	Number of Series Related Instances	(0020,1209)		X
IMAGE	Image Type	(0008,0008)		X
IMAGE	SOP Class UID	(0008,0016)	X	X
IMAGE	SOP Instance UID	(0008,0018)	X	X
IMAGE	Instance Number	(0020,0013)	X	X

**Table 2.18. Keys supported for Study Root Information Model**

Level	Attribute name	Tag	Matching	Returned
STUDY	Study Date	(0008,0020)	X	X
STUDY	Study Time	(0008,0030)	X	X
STUDY	Accession Number	(0008,0050)	X	X
STUDY	Modalities in Study	(0008,0061)	X	X
STUDY	Referring Physician's Name	(0008,0090)	X	X

NETWORKING

Level	Attribute name	Tag	Matching	Returned
STUDY	Study Description	(0008,1030)	X	X
STUDY	Patient's Name	(0010,0010)	X	X
STUDY	Patient ID	(0010,0020)	X	X
STUDY	Patient's Birth Date	(0010,0030)	X	X
STUDY	Patient's Birth Time	(0010,0032)	X	X
STUDY	Patient's Sex	(0010,0040)	X	X
STUDY	Study Instance UID	(0020,000D)	X	X
STUDY	Study ID	(0020,0010)	X	X
STUDY	Number of Study Related Series	(0020,1206)		X
STUDY	Number of Study Related Instances	(0020,1208)		X
SERIES	Series Date	(0008,0021)		X
SERIES	Series Time	(0008,0031)		X
SERIES	Modality	(0008,0060)	X	X
SERIES	Series Description	(0008,103E)		X
SERIES	Body Part Examined	(0018,0015)		X
SERIES	Performing Physician's Name	(0008,1050)		X
SERIES	Patient Position	(0018,5100)		X
SERIES	Series Instance UID	(0020,000E)	X	X
SERIES	Series Number	(0020,0011)	X	X
SERIES	Number of Series Related Instances	(0020,1209)		X
IMAGE	Image Type	(0008,0008)		X
IMAGE	SOP Class UID	(0008,0016)	X	X
IMAGE	SOP Instance UID	(0008,0018)	X	X
IMAGE	Instance Number	(0020,0013)	X	X

The following table summarizes status codes returned to the querying application entity:

**Table 2.19. APFS\_Application\_Entity C-FIND Response Status**

Service Status	Further Meaning	Error Code	Reason
Success	Success	0000	Matching is complete. No final Identifier is supplied.
Refused	Out of Resources	A700	Out of Resources
Failed	Identifier does not match SOP Class	A900	Identifier does not match SOP Class
Failed	Unable to process	C001	Peer not authorized to operation
Cancel	Matching terminated due to Cancel request	FE00	C-FIND SCU sent a Cancel Request
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported	FF00	All Optional Keys were supported in the same manner as Required Keys
Pending	Matches are continuing - Warning that one or more	FF01	One or more Optional Keys were not supported for existence and/or matching for this Identifier

Service Status	Further Meaning	Error Code	Reason
	Optional Keys were not supported		

When applicable, the optional attribute (0000,0902) Error Comment is used to supplement information about unsuccessful C-FIND operation.

In case of an exception (a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

**2.2.1.4.3.4. Presentation Context Acceptance Criterion**

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

**2.2.1.4.3.5. Transfer Syntax Selection Policies**

APFS\_Application\_Entity accepts the first supported transfer syntax.

**2.2.1.4.4. Real-world activity - Retrieve request (C-MOVE)**

**2.2.1.4.4.1. Description and Sequencing of Activities**

APFS\_Application\_Entity accepts an association from a source application entity to retrieve stored SOP instances using C-MOVE.

See Real-world activities - Retrieve request or User instruction above for C-STORE suboperations initiated.

**2.2.1.4.4.2. Accepted Presentation Contexts**

**Table 2.20. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Patient Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Patient Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
Study Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Study Root Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

APFS\_Application\_Entity may be configured to accept only a subset of all SOP Classes listed above. Moreover, for each acceptable SOP Class, it can be configured to accept only a subset of transfer syntaxes listed above.

If offered a choice of Transfer Syntaxes in the accepted Presentation Contexts, APFS\_Application\_Entity will select the first one supported from the list of proposed Transfer Syntaxes.

**2.2.1.4.4.3. SOP Specific Conformance**

APFS\_Application\_Entity does not support relational queries.

Case sensitivity/insensitivity and diacritics sensitivity/insensitivity in matching are configurable.

APFS\_Application\_Entity can be configured to limit the number of matching instances (the instances to be sent). If the request being processed exceeds the limit number then the services status returned will be response will be Refused: Out of Resources – Unable to calculate number of matches (Error Code A701).

The following table lists the supported matching:

**Table 2.21. Keys supported for Patient Root Information Model**

Level	Attribute name	Tag
PATIENT	Patient's Name	(0010,0010)
PATIENT	Patient ID	(0010,0020)
PATIENT	Patient's Birth Date	(0010,0030)
PATIENT	Patient's Birth Time	(0010,0032)
PATIENT	Patient's Sex	(0010,0040)
STUDY	Study Date	(0008,0020)
STUDY	Study Time	(0008,0030)
STUDY	Accession Number	(0008,0050)
STUDY	Modalities in Study	(0008,0061)
STUDY	Referring Physician's Name	(0008,0090)
STUDY	Study Description	(0008,1030)
STUDY	Study Instance UID	(0020,000D)
STUDY	Study ID	(0020,0010)
SERIES	Modality	(0008,0060)
SERIES	Series Instance UID	(0020,000E)
SERIES	Series Number	(0020,0011)
IMAGE	SOP Class UID	(0008,0016)
IMAGE	SOP Instance UID	(0008,0018)
IMAGE	Instance Number	(0020,0013)

**Table 2.22. Keys supported for Study Root Information Model**

Level	Attribute name	Tag
STUDY	Study Date	(0008,0020)
STUDY	Study Time	(0008,0030)
STUDY	Accession Number	(0008,0050)
STUDY	Modalities in Study	(0008,0061)
STUDY	Referring Physician's Name	(0008,0090)
STUDY	Study Description	(0008,1030)
STUDY	Patient's Name	(0010,0010)
STUDY	Patient ID	(0010,0020)
STUDY	Patient's Birth Date	(0010,0030)
STUDY	Patient's Birth Time	(0010,0032)
STUDY	Patient's Sex	(0010,0040)
STUDY	Study Instance UID	(0020,000D)
STUDY	Study ID	(0020,0010)
SERIES	Modality	(0008,0060)
SERIES	Series Instance UID	(0020,000E)
SERIES	Series Number	(0020,0011)
IMAGE	SOP Class UID	(0008,0016)
IMAGE	SOP Instance UID	(0008,0018)
IMAGE	Instance Number	(0020,0013)

The following table summarizes status codes returned to the querying application entity:

**Table 2.23. APFS\_Application\_Entity C-MOVE Response Status**

Service Status	Further Meaning	Error Code	Reason
Success	Sub-operations Complete - No Failures	0000	All matching SOP instances have been successfully sent to the destination application entity.
Warning	Sub-operations Complete - One or more Failures	B000	At least one of C-STORE suboperations finished with a failure or warning status.
Refused	Out of Resources – Unable to calculate number of matches	A701	Unable to calculate number of matches
Refused	Out of Resources – Unable to perform sub-operations	A702	Unable to perform sub-operations
Refused	Move Destination unknown	A801	Refused: Move Destination unknown
Failed	Identifier does not match SOP Class	A900	Identifier does not match SOP Class
Failed	Unable to process	C001	Peer not authorized to operation
Cancel	Sub-operations terminated due to Cancel Indication	FE00	C-MOVE SCU sent a Cancel Request
Pending	Sub-operations are continuing	0xFF00	Sent after each C-STORE suboperation

When applicable, the optional attribute (0000,0902) Error Comment is used to supplement information about unsuccessful C-MOVE operation.

In case of an exception (a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

**2.2.1.4.4.4. Presentation Context Acceptance Criterion**

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

**2.2.1.4.4.5. Transfer Syntax Selection Policies**

APFS\_Application\_Entity accepts the first supported transfer syntax.

**2.2.1.4.5. Real-world activity - Modality worklist request**

**2.2.1.4.5.1. Description and Sequencing of Activities**

If configured, APFS\_Application\_Entity accepts an association from a source application entity to query internal database about stored SOP instances using Modality Worklist C-FIND.

**2.2.1.4.5.2. Accepted Presentation Contexts**

**Table 2.24. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

**2.2.1.4.5.3. SOP Specific Conformance**

APFS\_Application\_Entity provides standard conformance to the DICOM Basic Worklist Management Service Class.

Case sensitivity/insensitivity and diacritics sensitivity/insensitivity in matching are configurable.

The following table lists the supported matching and returned keys:

**Table 2.25. Keys supported for Modality Worklist C-FIND**

Attribute name	Tag	Matching	Returned	Remark
<i>Scheduled Procedure Step</i>				
Scheduled Procedure Step Sequence	(0040,0100)	X	X	
>Scheduled Station AE Title	(0040,0001)	X	X	
>Scheduled Procedure Step Start Date	(0040,0002)	X	X	
>Scheduled Procedure Step Start Time	(0040,0003)	X	X	

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Attribute name	Tag	Matching	Returned	Remark
>Scheduled Procedure Step Location	(0040,0011)		X	Returned with no value.
>Modality	(0008,0060)	X	X	
>Scheduled Performing Physician's Name	(0040,0006)		X	Returned with no value.
>Scheduled Procedure Step Description	(0040,0007)		X	
>Scheduled Procedure Step ID	(0040,0009)	X	X	
<i>Requested Procedure</i>				
Requested Procedure Description	(0032,1060)		X	
Requested Procedure ID	(0040,1001)	X	X	
Study Instance UID	(0020,000D)		X	
Referenced Study Sequence	(0008,1110)		X	Returned with no value.
<i>Image Service Request</i>				
Accession Number	(0008,0050)	X	X	
Requesting Physician	(0032,1032)		X	
Referring Physician's Name	(0008,0090)		X	
<i>Visit Identification</i>				
Admission ID	(0032,0010)		X	Returned with no value.
<i>Visit Status</i>				
Current Patient Location	(0038,0300)		X	Returned with no value.
<i>Visit Relationship</i>				
Referenced Patient Sequence	(0008,1120)		X	Returned with no value.
<i>Patient Identification</i>				
Patient's Name	(0010,0010)	X	X	
Patient ID	(0010,0020)	X	X	
<i>Patient Demographic</i>				
Patient's Birth Date	(0010,0030)		X	
Patient's Sex	(0010,0040)		X	
Patient's Weight	(0010,1030)		X	
Confidentiality constraint on patient data	(0040,3001)		X	Returned with no value.
Patient's Age	(0010,1010)		X	
Patient's Size	(0010,1020)		X	
<i>Patient Medical</i>				
Patient State	(0038,0500)		X	Returned with no value.
Pregnancy Status	(0010,21C0)		X	Returned with no value.
Medical Alerts	(0010,2000)		X	Returned with no value.
Contrast Allergies	(0010,2110)		X	Returned with no value.
Patient Weight	(0010,1030)		X	Returned with no value.

The following table summarizes status codes returned to the querying application entity:

**Table 2.26. APFS\_Application\_Entity Modality Worklist C-FIND Response Status**

Service Status	Further Meaning	Error Code	Reason
Success	Success	0000	Matching is complete. No final Identifier is supplied.
Refused	Out of Resources	A700	Out of Resources
Failed	Identifier does not match SOP Class	A900	Identifier does not match SOP Class
Cancel	Matching terminated due to Cancel request	FE00	C-FIND SCU sent a Cancel Request
Pending	Matches are continuing - Current Match is supplied and any Optional Keys were supported	FF00	All Optional Keys were supported in the same manner as Required Keys
Pending	Matches are continuing - Warning that one or more Optional Keys were not supported	FF01	One or more Optional Keys were not supported for existence and/or matching for this Identifier

When applicable, the optional attribute (0000,0902) Error Comment is used to supplement information about unsuccessful C-FIND operation.

In case of an exception (a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

**2.2.1.4.5.4. Presentation Context Acceptance Criterion**

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

**2.2.1.4.5.5. Transfer Syntax Selection Policies**

APFS\_Application\_Entity supports only the Implicit VR Little Endian transfer syntax.

**2.2.1.4.6. Real-world activity - Storage Commitment request**

**2.2.1.4.6.1. Description and Sequencing of Activities**

If configured, APFS\_Application\_Entity accepts an association from a source application entity to request storage commitment.

**2.2.1.4.6.2. Accepted Presentation Contexts**

**Table 2.27. Acceptable Presentation Contexts for APFS\_Application\_Entity**

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Extended Negotiation
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

### 2.2.1.4.6.3. SOP Specific Conformance

APFS\_Application\_Entity provides standard conformance to the DICOM Storage Commitment Push Model Service Class as SCP.

SCP Operations Statement:

- If a Storage Commitment request is received then APFS\_Application\_Entity will immediately check if the referenced SOP Instances are in the internal database and return a N-EVENT-REPORT Notification. It will not cache Storage Commitment requests nor wait for SOP Instances to be received later.
- APFS\_Application\_Entity confirms storage commitment of SOP instances according its current state. SOP instances having been committed may be deleted at any point of time later. The deletion can be triggered:
  - by an user of the web-based graphical user interface (for details, see User Guide)
  - by APFS' automatic purging of old data if enabled (for details, see Administrator Guide and Service Guide)
- SOP instances having been committed by Storage Commitment can be retrieved APFS\_Application\_Entity via its Query/Retrieve services as defined in other places of this document.
- APFS\_Application\_Entity does not support the optional Storage Media File-Set ID & UID Attributes in the N-ACTION.

The following table summarizes status codes returned to the requesting application entity:

**Table 2.28. APFS\_Application\_Entity Storage Commitment N-ACTION Response Status**

Service Status	Further Meaning	Error Code	Reason
Success	Success	0000	Matching is complete. No final Identifier is supplied.
Failure	Processing failure	0110	Processing failure

When applicable, the optional attribute (0000,0902) Error Comment is used to supplement information about unsuccessful N-ACTION operation.

In case of an exception (a network timeout, a TCP/IP communication error) APFS\_Application\_Entity will abort the Association using DICOM A-ABORT.

### 2.2.1.4.6.4. Presentation Context Acceptance Criterion

APFS\_Application\_Entity accepts any Presentation Context for the supported SOP classes with the supported Transfer Syntaxes.

### 2.2.1.4.6.5. Transfer Syntax Selection Policies

APFS\_Application\_Entity supports only the Implicit VR Little Endian transfer syntax.

## 2.3. NETWORK INTERFACES

### 2.3.1. Physical Network Interfaces

APFS is indifferent to the physical medium over which TCP/IP executes.

## 2.3.2. Additional Protocols

APFS uses the name resolution (DNS resolution) provided by the underlying operating system.

## 2.4. CONFIGURATION

The Application Entity title, Port number and timeouts are defined via APFS configuration files (please refer to the *Service Guide*).

The Host name(s) and IP Address(es) are defined by means of the underlying operating system.

### 2.4.1. AE Title/Presentation Address Mapping

#### 2.4.1.1. Local AE Titles

**Table 2.29. AE Title configuration table**

AE	Default AE Title	Default TCP/IP Port
APFS_Application_Entity	APFSDCM	2370

#### 2.4.1.2. Remote AE Titles

Remote AE Titles are configured via web-based GUI which is a port of APFS (please refer to the *Administrator Guide*).

### 2.4.2. Parameters

**Table 2.30. Configuration parameters table**

Parameter	Configurable	Default Value
<i>General Parameters</i>		
Maximum PDU size the AE can receive	No	16384
Maximum PDU size the AE can send	No	16384
Time-out waiting for response to TCP/IP connect request (Low-level timeout)	Yes	120s
Time-out waiting after opening TCP/IP connection for Association Open Request (Application Level timeout)	Yes	60s
Time-out waiting for acceptance or rejection Response to an Association Open Request (Application Level timeout)	Yes	60s
General DIMSE level time-out values	Yes	600s
DIMSE level time-out for an open C-MOVE request	Yes	600s
Time-out an association may remain idle	Yes	1800s
<i>APFS_Application_Entity</i>		

<b>Parameter</b>	<b>Configurable</b>	<b>Default Value</b>
SOP Class support	Yes	As listed in Proposed/Accepted Contexts above. (APFS configuration may limit support to a subset of those SOP Classes.)
Transfer Syntax support	Yes	As listed in Proposed/Accepted Contexts above. (APFS configuration may limit support to a subset of those Transfer Syntaxes.)

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# Chapter 3. MEDIA INTERCHANGE

APFS does not support Media Storage.

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# Chapter 4. SUPPORT OF CHARACTER SETS

APFS supports following character sets:

- ISO\_IR 6 = Default repertoire
- ISO\_IR 100 = Latin alphabet No. 1 (ISO 8859-1)
- ISO\_IR 101 = Latin alphabet No. 2 (ISO 8859-2)
- ISO\_IR 192 = Unicode (UTF-8)

APFS does not use code extension techniques (only single value attribute is accepted for the (0008,0005) attribute).

## 4.1. CONFIGURATION

APFS has specific configuration options which affect the character set support:

1. APFS can run in ascii-only mode. If this applies then:
  - All matching performed by APFS ignores diacritics
  - Query responses returned by APFS contains strings without diacritics
  - String values in the Attributes updated in instances being sent are updated with strings without diacriticsThis mode "simulates" support for only Default repertoire.
2. If APFS doesn't run in ascii-only mode then it can be configured for diacritic-free matching. If it applies then
  - All matching performed by APFS ignores diacritics

For further details please refer to the *Service Guide*.

### **Warning**

The configuration options should not be used unless a strong argument exists. The options are specifically targeted for deployments in the Czech Republic where interoperability is difficult because character sets are often misused.

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# Chapter 5. SECURITY

## 5.1. SECURITY PROFILES

No support of security profiles is provided.

## 5.2. ASSOCIATION LEVEL SECURITY

APFS checks the following DICOM values when determining whether to accept Association Open Requests:

- Calling AE Title
- IP address of the requester

Please refer to the *Service Guide* for details.

## 5.3. APPLICATION LEVEL SECURITY

APFS refuses a request (C-STORE Request, C-FIND Request, C-MOVE Request) if the requesting application entity is not authorized to perform it (if it has not an appropriate role). The assignment of roles to application entities is performed by an administrator using a web-based GUI. Please refer to the *Administrator Guide* for details.

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# Appendix A. Annexes

## A.1. IOD CONTENTS

### A.1.1. Created SOP Instance(s)

N/A

### A.1.2. Usage of Attributes from received IOD's

N/A

### A.1.3. Attribute Mapping

N/A

### A.1.4. Coerced/Modified fields

APFS\_Application\_Entity modifies patient information in the composite instances being sent (in a C-STORE command) with the current information kept in the internal database. The SOP Instance UID stays unchanged. The modified attributes have been listed in the table "Attributes updated in instances being sent" above. Moreover, if specifically configured, APFS\_Application\_Entity adds a private attribute (0011,xx10) of Private Creator "ICZ APFS" to the composite instances. This attribute serves as a optimization hint of C-STORE between two instances of APFS\_Application\_Entity. A receiving APFS\_Application\_Entity always removes this attribute from received composite instances. As noted, this attribute is not added by default; APFS has to be configured to add this attribute and a specific receiver (C-STORE SCP) has to be listed. For details please refer to "AddPatientsUID" plugin in the *Service Guide*.

## A.2. DATA DICTIONARY OF PRIVATE ATTRIBUTES

The Private Attributes added to transferred SOP Instances are listed in the Table below. Further details on usage of these private attributes are contained in "Coerced/Modified fields" above.

**Table A.1. Data dictionary of private attributes**

Tag	Attribute Name	VR	VM	Value
(0011,00xx)	Private Creator	LO	1	ICZ APFS
(0011,xx10)	Patient's UID	UI	1	UID assigned to the patient in APFS' internal database