SERGS CURRICULUM

FOR ROBOT ASSISTED GYNAECOLOGICAL SURGERY

SERGS EDUCATIONAL NETWORK
SERGS
(SEN)

Society of European Robotic Gynaecological Surgery

INTRODUCTION

Thusfar, no European accredited training programmes or fellowships exist that might be used to certify gynaecologists to perform robot assisted surgery. Nevertheless, already in 2007 the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), together with the Minimal Invasive Robotic Association (MIRA) drafted a position paper with formal guidelines for training and credentialing (Herron, 2007).

The **Society of European Robotic Gynaecological Surgery (SERGS)** has also recently issued a consensus statement, describing regulatory mechanisms and setting criteria for training and accreditation on basis of an evaluation in analogy to the AGREE instrument for guidelines (The AGREE Collaboration, 2001).

Finally, the European Board and College of Obstetricians and Gynaecologists (EBCOG) has also issued 'Robotic Surgery Standards' as part of their 'Gynaecology Standards' (Mahmood 2014). This last document only describes training in broad terms, but it does clearly define the learning curve of surgeons that should be 'specifically trained' for robot assisted procedures, including sufficient systematic, and validated system as well as procedural (didactic and skills) training, as well as proctor assisted procedures.

Several studies have addressed both virtual and in vivo training instruments, some of which have been validated, that are now available for implementation in training programmes. Also manufacturers have a task to ensure a safe and efficient introduction of novices to their robotic platform (Pradarelli 2017).

To this end they already provide the opportunity for potential and actual users to train at training sites approved by the manufacturers. They have also defined 'clinical pathways' that surgeons should go through and have met before they 'may' perform robot assisted surgery. In the mean time urologists in Europe have drafted a validated curriculum in which modular training of procedures has shown to be more efficient than non-structured training (Volpe, 2014; Volgrove, 2016)

In addition, after the successful introduction of competence based training in general gynaecology and of structural assessment (Boerebach, 2016) these should also be the basis of assessment in basic and advanced training. Validated assessment tools are available like the Global Evaluative Assessment of Robotic Skills (GEARS, add. V), Non-technical Skills for Surgeons (NOTSS, add. VI), and Objective Structured Assessment of Technical Skills (OSATS, add. VII). At the end of the curriculum the trainee will provide video of an index procedure, which will be reviewed by experts using these assessment tools. At is has been shown that a video of the full procedure is not necessary for an adequate evaluation of skills, a representative part of the procedure will suffice (Khazalli, pers. comm).

Thus, with a number of guidance documents and after **the introduction of robot assisted surgery in gynaecology over 10 years ago,** there is a clear need but also the availability of tools for the development and implementation of a structured and regulated training curriculum.

PROCESS OF CREATING THE GYNAECOLOGICAL CURRICULUM FOR ROBOT ASSISTED SURGERY

SERGS, in co-operation with one of the manufacturers (Intuitive Surgical Inc., Sunnyvale, CA, USA), initiated a pilot for which 4 fellows, new to the field of robot assisted surgery, were offered to follow the first draft of this curriculum in order to study its feasibility and efficacy.

Also, a Delphi consensus view on the requirements of a curriculum was drafted by experts invited for this process by another manufacturer (Medtronic Inc., Minneapolis, MN, USA).

The preliminary experience of first users, together with the expert opinion based consensus was used to amend the pilot curriculum to this final curriculum.

ELIGIBILITY FOR TRAINING IN ROBOT ASSISTED LAPAROSCOPIC SURGERY

Surgeons eligible for training (equivalent of the UK RCOG Advanced Training Module, ATM) are:

- Certified gynaecologists
- Trainees who are taking part in a recognized subspeciality fellowship in the training center.

It should be noted that experienced surgeons, although they will not need to complete advanced procedural training, should follow a basic training course in a new robotic system before using such system. Nevertheless, also for experienced surgeons it would be beneficial to study the advanced training programme and to get tested on the advanced curriculum for their new robotic platform.

REQUIREMENTS FOR A TRAINING CENTER

a) The Centre should have a dedicated Robot Assisted Surgery Team of at least one surgeon dedicated to the subspeciality of the training (the Trainer).

b) The Centre should have a committed and stable robot assisted surgery practice that is not under threat of major changes during the period of training.

c) There should be an Operation Policy, Procedure Guidelines and Treatment Protocols for Robot Assisted Surgery relevant to the Training Program.

d) The Centre should have a clear policy of training the trainers portfolio.

e) The Trainer (surgeon dedicated to the subspeciality of the training) should preferably be assessed and certified. As long as certification is not yet in place a portfolio of training practice should be available and submitted to SERGS before start of the training.

f) The Centre should offer the opportunity of cross training and experience such as having an ongoing Robot Assisted Surgery program/practice in colorectal and urologic surgery.

g) There has to be an adequate workload in Robot Assisted Gynaecological Surgery in the chosen area of training, i.e. >100 cases per year.

h) The Accredited Training Centre should have a mature Clinical Governance portfolio in place which should include as a minimum:

i. Ongoing Audits of perioperative characteristics:

1. Total Operative Time
2. Blood transfusion rate
3. Conversion to laparotomy rate
4. Perioperative complications: type and rate
5. Length of hospital stay

ii. Ongoing Audits of Programme efficiency reflecting financial accountability:

1. Theatre utilisation profile
2. Length of waiting list as compared to previous performance
3. Above selected audits as blood transfusion, conversion rates and` length of hospital stay

iii Regular Risk Management and Morbidity/Mortality meetings to discuss relevant incidents.

These requirements will be monitored and/or audited by **SERGS**.

MINIMAL REQUIREMENTS OF THE PROGRAMME

a) **MODULE I: BASIC TRAINING** period, including both ex vivo model and virtual system and procedural training.

b) **MODULE II: TRAINING COURSE,** including virtual and animal model system and procedural training.

c) **MODODULE III: MENTORED WORK,** including modular training in patient procedures with structural assessment.

d) Use of **VALIDATED ASSESSMENT** tools is advised (like **OSATS, GEARS** and **NOTSS**).

e) **A LOG BOOK** is required, including at least **OSATS**.

f) **CERTIFICATION** will take place through the Log Book which should be submitted to and reviewed by a **Certification Committee of SERGS**.

OUTLINE OF THE CURRICULUM:

The curriculum will follow a validated and published (Schreuder, 2012) format:

Robot Assisted Laparoscopy Training Curriculum	
System Training	
Didactic Training	› Knowledge robotic system and instruments › Test knowledge (exam)
Dry Lab	› How to use robot console › How to use camera en instruments › How to prepare the system (draping, setup) › How to solve common errors › Practice validated basic skills (competence based) › Test skills (exam)
Virtual Reality Simulation	› Learning about the system (interactive) › Practice validated basic skills (competence based) › Practice procedure specific skills (competence based)
Animal Laboratory	› Team training (surgeon and patient side assistant)
Cadaver Training	› Team training (surgeon and patient side assistant)
Procedural Training	
Didactic Training	› Indications, patient selection › Positioning patient, trocar, robot › Complications and their management › Test knowledge (exam)
Live-Observation Video Observation	› Observe real operations with mentor (live cases ovideo recordings) › Tips, Tricks and complications
Dry Lab	› Practice validated advanced skills (competence based) › Practice procedure specific skills (competence based)
Virtual Reality Simulation	› Practice procedure specific skills (competence based)
Animal Laboratory	› Practice procedure specific skills (steps of a procedure)
Cadaver Training	› Practice procedure specific skills (steps of a procedure)
Patients	› First function as a table side assistant › Stepwise approach of procedure › Proceed to next step after showing proficiency previous step › Proctoring or preceptoring (minimum of 10 cases)
Follow-Up	› Evaluation of surgical performance › Evaluation of patient outcome (operative and patient quality parameters)

Fellows may start at any time in one of the training centers but should consecutively pass the various modules of the curriculum, each of which will be assessed by the local tutor. Patient procedures should also be assessed/reviewed by at least one other experienced robot assisted laparoscopist.

The curriculum is composed of modules (basic training, advanced hands-on training and mentored procedural training). Each of the modules will have to be passed before starting the next module. Also, as stepwise training has proven to be the most efficient and safe method to learn a new procedure (Lovegrove, 2016), fellows are supposed to perform an increasing number of well described steps (see add. I and II) at each subsequent procedure.

The trainee will after each number of steps as first surgeon, assist the Trainer and act as bed-side assistant. Thus stepwise training, as opposed to guiding the trainee each time through a complete procedure, prevents exhaustion of the trainee with consequently and subsequently failure to fully and adequately comprehend and perform the next steps.

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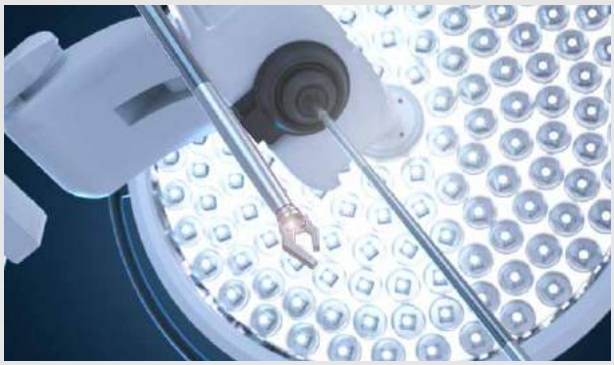
PARTS OF THE TRAINING

MODULE I: BASIC TRAINING (System Training)

Structure

Basic training should preferably follow a common approach with similar pathways across all (sub-) speciality groups.



This part of the training must be completed before further modules can be followed. Basic skills should be evaluated with e.g. the 'Baseline Skills Evaluation' (add. III) as well as a written knowledge test before participation in the course at the training center and involves at least:

1. 2 days of e-/virtual learning:

1. Theoretical knowledge about principles of robot assisted surgery (e.g. e-BRUS)
2. Dry lab and drill training with robot
3. Virtual training on robot virtual training module or on a stand-alone virtual training system.

2. 1 month of assistance at robot assisted procedures, at first assisting and subsequently stepwise performing level 3-4 laparoscopic procedures.

Evaluation

Formal on line or built in (VR) basic skills test (e.g. add. III) and a written knowledge test.

MODULE II: TRAINING COURSE (Advanced Hands-On Training)

Structure

a) Theoretical system training (half a day)

b) System and basic procedural training on animal models (at ORSI; 3-4 days)

c) At least one day of observation and discussion/evaluation of a procedure in a training center (organized from ORSI)

Evaluation

a) At the beginning and the end of the training course a virtual training test will assess progress.

b) At the end of the training performance will be assessed by NOTSS (add. IV) for modular training and by GEARS (add. IV) and OSATS (add. V) for procedural training.

c) A certificate of attendance will be issued.

MODULE III: MENTORED WORK (Advanced Case Training under Supervision)

Structure

After basic training and completion of a one week course, six months of in house training should include:

1. Theoretical (e-learning on-line, by video and simulation) training. Training should focus on stepwise training of the index procedures (simple hysterectomy and lymphadenectomy).

2. E-learning should include information on patient selection and preparation, port placement, non-technical skills training, trouble shooting, emergency scenario management information, and information on additional equipment.

3. Assisting and subsequently stepwise (modular) performing a level 3 laparoscopic procedure, e.g. hysterectomy (add. 1), and at a level 4 procedure, e.g. lymphadenectomy (add. 2).

4. Team training, including emergency scenarios, team decision making, bedside

5. To be an **independent surgeon** the trainee should have performed at least 10 cases mentored/proctored by an experienced trainer.

6. Observing peri-operative care and outcome.

Evaluation

a) Procedural training should be monitored by GEARS (add.III) and OSATS (add. V)

b) Participation and assessment of the various parts/modules as well as the cases operated should be documented by the trainee and checked by their tutor in the Log Book (add. VI)

c) Finally, an unedited video recording of at least half of the time used for the index procedure should be submitted to at least one external reviewer for assessment using GEARS (add. IV) and NOTSS (add. V) and/or OSATS (add. VI)

CERTIFICATION

The Logbook and assessment of the external reviewer may be submitted to the Educational Committee of SERGS. If the achievements meet all requirements and if assessments show adequate performance by the trainee a certificate may be issued, stating that the gynaecologist has successfully passed the curriculum for robot assisted surgery.

ADDENDUM I

STEPWISE DESCRIPTION OF HYSTERECTOMY

No of Step	Description of Surgical Procedure	Module				
		Lowest level of difficulty				Highest level of difficulty
		I	II	III	IV	V
1	Placement of uterine manipulator					
2a	Trocar placement					
2b	Adhaesiolysis, if necessary					
3	Docking of robot					
4	Adhaesiolysi/mobilsation of bowel					
5a	Dissection of tube, if necessary					
5b	Transsection of ovarian ligaments					
6a	Transsection of round ligaments					
6b	Dissection bladder peritoneum					
7a	Transsection uterine pedicles					
7b	Mobilisation uterine pedicles					
8a	Vaginal circumcision					
8b	Removal of uterus +/- adnexa					
9	Suturing of vagina					
10	Dedocking & removal of instruments					
11	Suturing skin					

ADDENDUM II

STEPWISE DESCRIPTION OF PELVIC LYMPHADENECTOMY

Order of Step	Description of Surgical Procedure	Module				
		Lowest level of difficulty				Highest level of difficulty
		I	II	III	IV	V
1	Trocar placement					
1b	Adhesiolysis, if necessary					
2	Docking of robot					
3	Adhesiolys/mobilisation of bowel					
4a	Incision of the peritoneum					
4b	Defining of retroperitoneal spaces					
5a	Dissection of ext.il. nodes					
5b	Dissection of int. il. nodes					
5c	Dissection of obturator nodes					
6	Vascular/neural repair, if necessary					
7	Dedocking & removal of instruments					
8	Suturing skin					

ADDENDUM III

BASELINE SKILLS EVALUATION

A) Da Vinci Surgeon Skills Drills Exercises

The examiner will use a score 1 -> 5, where 1 = poor, 5 = excellent

EXERCISE #1. ROBOTIC DOCKING AND INSTRUMENT INSERTION

Target: to efficiently dock the robot and insert the instruments under view

Time to complete the exercise: _____ sec

Ability to properly dock the robot	1	2	3	4	5
Ability to insert the camera	1	2	3	4	5
Ability to insert instrument	1	2	3	4	5
Ability to insert instrument 3 (4th arm)	1	2	3	4	5

EXERCISE #2. RING ROLLERCOASTER 1

Target: to move the ring along the wire from left to right to the finish position and back to the start position, transferring from hand to hand as needed (repeat two times)

Time to complete the exercise: _____ sec

Ability to keep instruments under vision	1	2	3	4	5
Avoidance of instrument crossing/collision	1	2	3	4	5
Avoidance of excessive instrument force	1	2	3	4	5
Ability to maintain the hands in a central, comfortable position	1	2	3	4	5

Falling of ring _____ times

EXERCISE #3. RING ROLLERCOASTER 2

Target: to move the ring along the wire from left to right to the finish position and back, transferring from hand to hand as needed (repeat two times)

Time to complete the exercise: _____ sec

Ability to keep instruments under vision	1	2	3	4	5
Avoidance of instrument crossing/collision	1	2	3	4	5
Avoidance of excessive instrument force	1	2	3	4	5
Ability to maintain the hands in a central, comfortable position	1	2	3	4	5

Falling of ring _____ times

EXERCISE #4. RING ROLLERCOASTER 3

Target: to move the ring along the wire from left to right to the finish position and back, transferring from hand to hand as needed (repeat two times)

Time to complete the exercise: _____ sec

Ability to keep instruments under vision	1	2	3	4	5
Avoidance of instrument crossing/collision	1	2	3	4	5
Avoidance of excessive instrument force	1	2	3	4	5
Ability to maintain the hands in a central, comfortable position	1	2	3	4	5

Falling of ring _____ times

EXERCISE #5. RING ROLLERCOASTER 4

Target: to move the two rings along the wire from left to right to the finish position, transferring from hand to hand as needed

Time to complete the exercise: _____ sec

Ability to keep instruments under vision	**1**	**2**	**3**	**4**	**5**
Avoidance of instrument crossing/collision	**1**	**2**	**3**	**4**	**5**
Avoidance of excessive instrument force	**1**	**2**	**3**	**4**	**5**
Ability to maintain the hands in a central, comfortable position	**1**	**2**	**3**	**4**	**5**

Falling of ring _____ times

B) Da Vinci Mymic Skills Simulator

EXERCISE #6. CAMERA AND CLUTCHING - RING WALK 3

Time to complete the exercise:	_____ sec
Overall score	_____ %
Economy of motions:	_____ cm
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm

EXERCISE #7. ENDOWRIST MANIPULATION 2 - MATCH BOARD 2

Time to complete the exercise:	_____ sec
Overall score	_____ %
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm
Drops	_____

EXERCISE #8. ENERGY AND DISSECTION - ENERGY SWITCH 2

Time to complete the exercise:	_____ sec
Overall score	_____ %
Economy of motions:	_____ cm
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm
Misapplied energy time	_____ sec

EXERCISE #9. NEEDLE CONTROL - THREAD THE RINGS

Time to complete the exercise:	_____ sec
Overall score	_____ %
Economy of motions:	_____ cm
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm
Drops	_____

EXERCISE #10. NEEDLE DRIVING - SUTURE SPONGE 2

Time to complete the exercise:	_____ sec
Overall score	_____ %
Economy of motions:	_____ cm
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm
Drops	_____
Missed targets	_____

EXERCISE #11. NEEDLE DRIVING - DOTS AND NEEDLES 1

Time to complete the exercise:	_____ sec
Overall score	_____ %
Economy of motions:	_____ cm
Instrument collisions	_____
Excessive instrument force	_____ sec
Instruments out of view	_____ cm
Master workshop range	_____ cm
Drops	_____
Missed targets	_____

EXERCISE #12. NEEDLE SUTURING - INTERRUPTED SUTURING

(star=3; green dot=2; red dot=1)

Time to complete the exercise:	_____ sec
Needle handling	_____
Knot tying	_____
Time efficiency	_____

ADDENDUM IV

VALIDATION OF TECHNICAL SKILLS: GEARS

THE GLOBAL EVALUATION AND ASSESSMENT OF ROBOTIC SKILLS (GEARS)

Depth Perception

1	2	3	4	5
Constantly overshoots target, wide swings, slow to correct		Some overshooting or missing of target, but quick to correct		Accurately directs instruments in the correct plane to target

Bimanual dexterity

1	2	3	4	5
Uses only one hand ignores nondominant hand, poor coordination		Uses both hands, but does not optimize interaction between hands		Expertly uses both hand in a complementary way to provide best exposure

Efficiency

1	2	3	4	5
Insufficient efforts; many uncertain movements; constantly changing focus or persisting without progress		Slow, but planned movements are reasonalby organized		Confident, efficient and safe conduct, maintains focus on task, fluid progression

Force sensitivity

1	2	3	4	5
Rough moves, tears tissue, injures nearby structures, poor control, frequent suture breakage		Handles tissues reasonably well, minor trauma to adjacent tissue, rare suture breakage		Applies appropriate tension, negligible injury to adjacent structures, no suture breakage

Autonomy

1	2	3	4	5
Unable to complete entire task, even with verbal guidance		Able to complete task safely with moderate guidance		Able to complete task independently without prompting

Robotic Control

1	2	3	4	5
Consistently does not optimize view, hand position, or repeated collisions even with guidance		View is sometimes not optimal. Occasionally needs to relocate arms. Occasional collisions and obstruction of assistant		Controls camera and hand position optimally and independently. Minimal collisions or obstruction of assistant

ADDENDUM V

VALIDATION OF NON-TECHNICAL SKILLS: NOTSS

TABLE 1. NOTSS SKILLS TAXONOMY V1.2

Category	Elements
Situation Awareness	• Gathering information • Understanding information • Projecting and anticipating future state
Decision Making	• Considering options • Selecting and communicating option • Implementing and reviewing decisions
Communication and Teamwork	• Exchanging information • Establishing a shared understanding • Co-ordinating team activities
Leadership	• Setting and maintaining standards • Supporting others • Coping with pressure

NOTSS SYSTEM RATING OPTIONS

Rating Label	Description
4 – Good	Performance was of a consistently high standard, enhancing patient safety; it could be used as a positive example for others
3 – Acceptable	Performance was of a satisfactory standard but could be improved
2 – Marginal	Performance indicated cause for concern, considerable improvement is needed
1 – Poor	Performance endangered or potentially endangered patient safety, serious remediation is required
N/A – Not Applicable	Skill was not required or relevant in this case

VALIDATION OF NON-TECHNICAL SKILLS: NOTSS

(prepared on basis of the OSATS used by the RCOG for laparoscopy)

- WHAT WENT WELL ?

- WHAT COULD BE IMPROVED?

	Performs Well/ Independently	Needs Help	Not Proficient
ASSESSMENT OF PROCEDURE			
Correct docking and de-docking			
Maintains correct position of optics			
Clear inspection of structures			
Movements: fluid & atraumatic			
Appropriate use of assistance			
Appropriate use of robotic versatility			
GENERAL TECHNICAL ASSESSMENT			
Time, motion, forward planning			
Appropriate instrument use			
Technical use of assistants			
Relation with surgical team			
Insight/attitude			
Documentation of procedure			

ADDENDUM VI

PORTFOLIO FOR FELLOWS FOLLOWING THE SERGS CURRICULUM

PERSONAL DETAILS:

Name:

Date of birth:

Year of (sub)specialization:

Center:

Supervisor / director of fellowship programme:

Starting date of fellowship:

Assessment of the various parts and modules:

Unless specifically required otherwise (e.g. for a pre- and post-course test) assessments need to be done at least once.

Assessments of procedures are preferably done at multiple time points in order to allow monitoring of development of proficiency as well as making necessary adjustments where deficiencies are noticed (this refers mainly to OSATS)

For the time being no strict and hard criteria for passing a test or training have been made, but if assessment is done in a structured way as proposed this allows to ascertain at least forward development. Whether or not proficiency is enough to operate independently is left to the local supervisor, together with the revie of an independent supervisor (proctor and/or video reviewer).

EXAM = more or less formal assessment by local supervisor

PARTICIPATION = the fellow actively attends training

CASE OBSERVATION = assessment by an independent reviewer (proctor) of at least one case where a complete procedure is performed by the fellow as first surgeon. This may be replaced by a video review.

VIDEO REVIEW = assessment by an independent reviewer of at least one unedited video of a complete procedure is performed by the fellow as first surgeon. This may be replaced by a life case observation.

FIRST PERIOD: BASIC TRAINING: ORIENTATION & MODELS

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
Didactic	Knowledge of robot system		Exam	
	Knowledge of procedures		Exam	
Dry Skills	Use of console		Participation	
	Use of instruments		Participation	
	Set-up of robot		Participation	
	Solving common problems		Participation	
	Practice validated skills		BSE	
	EXERCISE #1		Time: Docking: Camera: Instruments 1&2: Instrument 3:	
	EXERCISE #2		Time: Vision: Crossing: Force: Comfort: # falls:	

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
	EXERCISE #3		Time: Vision: Crossing: Force: Comfort: # falls:	
	EXERCISE #4		Time: Vision: Crossing: Force: Comfort: # falls:	
	EXERCISE #5		Time: Vision: Crossing: Force: Comfort: # falls:	
Virtual	Learning the system (e.g. online dV Surgical System Training)		Participation (+ online assessment)	
	Practice validated skills		Test (M/dV*)	
	EXERCISE #6		Time: Score: Motions: Collisions: Force: View: Range:	
	EXERCISE #7		Time: Score: Motions: Collisions: Force: View: Range: Drops:	

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
	EXERCISE #8		Time: Score: Motions: Force: View: Range: Energy:	
	EXERCISE #9		Time: Score: Motions: Force: View: Range: Drops:	
	EXERCISE #10		Time: Score: Motions: Force: View: Range: Drops: Targets:	
	EXERCISE #11		Time: Score: Motions: Force: View: Range: Drops: Targets:	
	EXERCISE #12		Time: Handling: Tying: Efficiency:	

* Test can be performed on Mimic or da Vinci Virtual Trainer (Skills Simulator)

ABBREVIATIONS:
BSE: Base Line Evaluation (Addendum I)

SECOND PERIOD: ADVANCED HANDS-ON TRAINING ORSI

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
Didactic	Knowledge of robot systems		Participation	
	Knowledge the use of models		Participation	
Virtual	Practice procedural skills		Part. (M/dV*)	
	View video/life surgery		Participation	
	EXERCISE #6 BEGINNING		Time: Score: Motions: Collisions: Force: View: Range:	
	EXERCISE #6 END		Time: Score: Motions: Collisions: Force: View: Range:	
	EXERCISE #7 BEGINNING		Time: Score: Motions: Collisions: Force: View: Range: Drops:	
	EXERCISE #7 END		Time: Score: Motions: Collisions: Force: View: Range: Drops:	

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
	EXERCISE #8 BEGINNING		Time: Score: Motions: Collisions: Force: View: Range: Energy:	
	EXERCISE #8 END		Time: Score: Motions: Collisions: Force: View: Range: Energy:	
	EXERCISE #9 BEGINNING		Time: Score: Motions: Collisions: Force: View: Range: Drops:	
	EXERCISE #9 END		Time: Score: Motions: Collisions: Force: View: Range: Drops:	
	EXERCISE #10 BEGINNING		Time: Score: Motions: Collisions: Force:	

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
			View: Range: Drops: Targets:	
	EXERCISE #10 END		Time: Score: Motions: Collisions: Force: View: Range: Drops: Targets:	
	EXERCISE #11 BEGINNING		Time: Score: 26 Motions: Collisions: Force: View: Range: Drops: Targets:	
	EXERCISE #11 END		Time: Score: Motions: Collisions: Force: View: Range: Drops: Targets:	
	EXERCISE #12 BEGINNING		Time: Handling: Tying: Efficiency:	

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
	EXERCISE #12 END		Time: Handling: Tying: Efficiency:	
Animal	Practice basic skills		BSE / GEARS	
	Practice hysterectomy		NOTSS/OSATS	
	Practice lymphadenectomy		NOTSS/OSATS	

EXPLANATION OF TERMINOLOGY:

EXAM = more or less formal assessment by local supervisor

PARTICIPATION (PART.) = execution of test or procedure by fellow

ABBREVIATIONS:

BSE: Base Line Evaluation (Addendum I)

GEARS: Global Evaluation and Assessment of Robotic Skills (Addendum II)

NOTSS: NOn-Technical Skills for Surgeons (addendum III)

OSAT: Objective Structured Assessment of Technical Skills (Addendum IV)

THIRD PERIOD: ADVANCED IN HOUSE, MENTORED TRAINING

Type of Training	Training Part	Date of Completion	Type of Assessment	Signed by Supervisor
Didactic	Indications & types of surg.		Exam	
	System skill drill		Participation	
Virtual	Practice procedural skills		Test (M/dV*)	
Bedside	Stepwise hysterectomy		NOTSS/OSATS	
	Stepwise lymphadenectomy		NOTSS/OSATS	
	Peri-operative care		Participation	
	Case observation life (proctor)		NOTSS/OSATS	
	Case observation video		NOTSS/OSATS	

* Test can be performed on Mimic or da Vinci Virtual Trainer (Skills Simulator)

ABBREVIATIONS:

BSE: Base Line Evaluation (Addendum I)

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OSAT: Objective Structured Assessment of Technical Skills (Addendum IV)

CASES, BASIC TRAINING: ORIENTATION & MODELS

Date	Procedure	Assisted Only	Assisted incl. (de-)docking	First surgeon	NOTSS/GEARS/ OSAT