NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Office of Development Commissioner
Ministry of Micro, Small and Medium Enterprises
UdyogBhawan,
Rafi Marg,
New Delhi - 110011

Name and contact details of individual dealing with the submission

Name	**:** Mr. S. V. Rasal
Position in the Organization	**:** Managing Director
Address if different from above	Institute for Design of Electrical Measuring Instruments, Mumbai
Tel number	: 022-24050301
E-mail address	**:** pdidemi@yahoo.com

List of documents submitted in support of the Qualifications File

1. Curriculum
2. MESC Skill Gap Study
3. Industrial Validation

NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

SUMMARY

Qualification Title	**3D Animation & Special Effects**
Qualification Code	MSME/ANI/05
Nature and purpose of the qualification	**Nature:**Certificate course of 3D Animation & Special Effects, **Purpose:**Learnerswho attain this qualificationare competent in 3D animation or visual effects artists and can get a job in Photo studio, advertising/media company or become an entrepreneur. • Qualifying learners attain skills to work in post production,design sound, capture motion, visualise in 3Dspace • Qualified learners are capable of animating characters, modelling objects and characters, texturing and lighting objects, characters and backgrounds, drawing characters and objects, storyboarding scripts, managing own projects, compositing layers, managing electronic files, rigging models, rendering files, formats and outputting, designing backgrounds, assessing contracts and marketing their own 3D animation and visual effects capabilities.
Body/bodies which will award the qualification	**Ministry of Micro, Small and Medium Enterprises, New Delhi (Certificate Awarded by IDEMI, Mumbai)**
Body which will accredit providers to offer courses leading to the qualification	**Ministry of Micro, Small and Medium Enterprises, New Delhi (MSME-TCs in respective Extension Centre)**
Body/bodies which will carry out assessment of learners	Examination Cell of Institute for Design of Electrical Measuring Instruments, Mumbai
Occupation(s) to which the qualification gives access	3D Animators or VFX Compositor
Licensing requirements	Not Applicable
Level of the qualification in the NSQF	4
Anticipated volume of training/learning required to complete the qualification	500 hours
Entry requirements and/or recommendations	Preferably 10th Passed
Progression from the qualification	**Job Progression:** After completion of course andafter 2 years of field experience the traineecan work as a Senior 3D Animator and after that 3 years of experience, the person can work as a Lead Animator.

	Education progression: B.Voc.(Multimedia and Animation)programme is a next stage of progression in education to the trainee.
Planned arrangements for the Recognition of Prior learning (RPL)	Yes
International comparability where known	The South African Qualification Authority approved qualification 3D Animation and Visual Effects. (**STAATSKOERANT, 18 AUGUSTUS 2006** No. **29128)(Level 5)** (http://regqs.saqa.org.za/viewQualification.php?id=57607)
Date of planned review of the qualification.	01/2018
Formal structure of the qualification	

3D Animation & Special Effects	**Mandatory/ Optional**	**Estimated size (learning hours)**	**Level**
Introduction to Computers and Internet Navigation	Mandatory	25 Hrs	3
Communication at Workplace	Mandatory	25 Hrs	4
Digital Film Making	Mandatory	100 Hrs	4
Basics of Video and Sound Editing	Mandatory	100 Hrs	3
Basic Compositing	Mandatory	100 Hrs	4
3D Animation	Mandatory	100 Hrs	4
Admission and Examination	Mandatory	50 Hrs	
Total		**500 Hrs**	

SECTION 1
ASSESSMENT

Body/Bodies which will carry out assessment:
Assessment for the 3D Animation and Special Effect is conducted in Examination Cell of IDEMI, Mumbai

Will the assessment body be responsible for RPL assessment?

YES. Learnerswho have met the requirementsof any Unit Standard that forms partof this qualification mayapply for recognitionof prior learning to the relevantEducationbody. The applicantmust be assessedagainst the specific outcomes andwith the assessmentcriteriafor the relevant UnitStandards.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

1. ASSESSMENT GUIDELINE:

- Criteria for assessment based on each learning outcomes, will be assigned marks proportional to its importance.
- The assessment for the theory &practical part is based on knowledge bank of questions created by trainers and approved by Examination cell (IDMI Mumbai)
- For each Individual batch, Examination cell will create unique question papers for theory part as well as practical for each candidate at each examination.
- To pass the Qualification, every trainee should score a minimum of 75% cumulatively (Theory and Practical)
- Assessmentcomprises the following components:

>Job carried out in labs/workshop
>Record book/ daily diary
>Answer sheet of assessment
>Viva –voce
>Progress chart
>Attendance and punctuality

2. ASSESSORS:

IDEMI faculty teaching the 3D animation and Special Effect course, also assesses the students as per guidelines set by Examination cell of IDEMI. Faculties are been trained from time to time to upgrade their skills on various aspects such as conduction of assessments, teaching methodology etc. These training are usually conducted at IIT Bombay, K. J. Somaiya Institute, and other tool rooms in the country.

3. ELIGIBILITY TO APPEAR IN THE EXAM:

Minimum 75% attendance is compulsory for the students to appear for the assessments.

4. MARKING SCHEME:

Sr. No.	Method of Assessments	Weightage (Max. marks)	Evaluator
1	Written test	30	**Trainer + Moderator (Head of Animation)+ Examiner nominated by Examination cell (IDEMI)**
2	Practical test	30	
3	Oral test/viva voce	10	
4	Portfolio	10	
5	Project	10	
6	Direct Observation	10	
Total		**100**	

5. PASSING MARKS:

Passing criteria is based on marks obtain in attendance record, term works , assignments, practical's performance, viva or oral exam, module test, practical exam and final exam

Minimum Marks to pass practical exam – 70%
Minimum Marks to pass final exam – 70%

Minimum Marks to pass viva / oral exam – 70%

Minimum Marks to pass Project report and presentation exam – 90%

6. RESULTS AND CERTIFICATION:

The assessment results are backed by evidences collected by assessors. Successful trainees are awarded the certificates by IDEMI.

ASSESSMENT EVIDENCE

Assessment evidence comprises the following components document in the form of records:

1) Job carried out in labs/workshop
2) Record book/ daily diary
3) Answer sheet of assessment
4) Viva –voce
5) Progress chart
6) Attendance and punctuality

Title of Component: 3D Animation and Special Effects

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
1	Demonstrate the use of computer peripherals and Manage files and folders	The candidate should able to; 1.1 Describe the parts of a computer system 1.2 Describe the use of different types of software 1.3Differentiate between primary and secondarymemory 1.4Differentiate between system software andapplicationsoftware 1.5 Distinguish between common I/O ports and connectors 1.6 Identify hardwarecomponents of computer 1.7 Connect various parts anddevices of computer system. 1.8 Start and shut down acomputer system 1.9Describe the purpose of files and folders 1.10 Describe the procedure for locating files and folders onthe drive 1.11 Create a file and folder. 1.12 Locate and rename a folder and file 1.13. Delete a file or folder, COPY-PASTE file and folder, CUT-PASTE file and folder
2	Demonstrate the use of Internet, surfing and social networking sites	The candidate should able to; 2.1 Describe purpose of internet,world wide web 2.2 Explain the terms – InternetService Provider, UniformResource Locator, Hyperlink,etc. 2.3 Name different web browsers 2.4 Describe the risks associatedwith the online activity like:unintentional disclosure ofpersonal information, 2.5 Demonstrate how to connectto internet

		2.6 Open and close web browsingapplication 2.7 Enter the URL in the addressbar 2.8 Search documents usingsearch engines 2.9 Navigate forward andbackward between previously visited web pages
3	Demonstrate the use of Email	The candidate should able to; 3.1 Describe the purpose ofemail 3.2 Explain the structure ofemail address 3.3 Describe the variousfeatures of email and theiruses 3.4 Describe the advantages ofusing email, like speed ofdelivery, low cost, facilityfor attachment ofdocuments, spell checkfacility, etc. 3.5 Describe the differencebetween the To, CC, BCCfields. 3.6 Describe the procedure ofsending, forwarding and searching emails 3.7 Discuss the best practices tobe adopted while usingemail 3.8 Create an email account, Compose an email, Insert and remove a fileattachment 3.9 Open the Sent box to see the, emails sent, Add signatures, Prepare and save a draft, message in Drafts folder 3.10 Manage an email account bymoving emails intofolders/labels, Manage email account bydeleting unwanted messagesfrom inbox and trash folder
4	Identify elements ofcommunication cycle and Provide feedback	The candidate should able to; 4.1Describe the meaning ofcommunication 4.2 State the different elements ofcommunication cycle 4.3 Identify elements ofcommunication cycle, Draw a diagram ofcommunication cycle 4.4Differentiate between Sender,Message, Medium, Receiverand Feedback. 4.5 Describe the importance ofactive listening 4.6Describe the meaning offeedback 4.7 Describe the importance offeedback 4.8Describe the characteristics offeedback 4.9 Differentiate betweendescriptive and specificfeedback
5	Overcome barriers inCommunication, Applyprinciples of communication	5.1Describe the factors that act ascommunication barrier 5.2 Describe the ways to overcomebarriers in effective Communication 5.3Describe the various principlesof effective communication

6	Understanding the software tools to be used for production	The candidate able to; 6.1 Describe the various types of software tools available for production in the market including: 2D animation: Toon Boom Harmony, Adobe Flash, Hand-drawing 3D animation: Autodesk Maya, XSI, Motion Builder, 3D Studio Max, Blender 6.2 Other custom and in-house toolsfor the production
7	Selecting the animation technique(s) to be used	The candidate should able to 7.1. Indentify an appropriate animation technique based on the output required **2D animation:** Cell animation (e.g. early episodes of Tom and Jerry (series)) Cut out animation (e.g. Charlie and Lola (series)) Limited animation (e.g. South Park, Empire Square (series) **3D Animation:** Realistic 3D animation- motion capture + key frame animation (e.g. in films such as Beowulf, Avatar and Lord of the Rings' Gollum) 7.2 Identify and demonstrate use of Semi-realistic 3D animation (e.g. films like little Krishna and Brave) Toon 3D animation (e.g. films such as Kung-fu Panda) Simulation of traditional & stop motion techniques (e.g. advertisements such as VinetaCucini, Amaron Battery etc.) Stop-motion animation Others including VFX, stereo conversion
8	Use adobe premiere pro, Edit the video	The Candidate should able to; 8.1 Explain the concept of workspaces with examples 8.2 Describe video and soundediting projects and its Creation 8.3 Demonstrate the use of toolbox of Adobe premiere pro 8.4 Describe video editing workflow 8.5 Describe timeline panel, Explain basic standards followed in editing a video, Describe clips and its types 8.6 Demonstrate how to edit thevideo
9	Use Adobe sound booth,Edit the sound	The Candidate should able to; 9.1Describe the procedure ofincreasing or decreasing theamplitude of a range byusing the volume pop-upmenu 9.2 Demonstrate the ability touse simple features of Adobesound booth 9.3 Give demo of editing thebeginning or end of an audiotrack 9.4 Explain various ways ofediting audio track 9.5 Demonstrate how to increaseor decrease the length of therange by clicking anddragging the start and end points of the audio track 9.6 Demonstrate how to edit thesound track

10	Demonstrate how to create Compositions, Use Adobe after effects and Demonstrate theknowledge of compositing	The Candidate should able to; 10.1 Explain the basic standardsfollowed in compositions 10.2 Explain minimumrequirements forcompositing imagesthrough: • Physical composition • Multiple Exposure • Background projection • Matting 10.3 Composite the image usingfollowing techniques: • Physical composition • Multiple Exposure • Background projection • Matting 10.4 Explain Work spaces and itstypes 10.5 Explain the concept and useof various tools of tool box 10.6 Demonstrate how to createand arrange layers in acomposition 10.7 Demonstrate theknowledge of compositing 10.8 Demonstrate working witheffects through EffectControls Panel
11	Describe the Pre production activities	The Candidate should able to; 11.1Demonstrate how to performpre-productionactivities 11.2 Prepare a flow chart of preproduction activities and Requiredmaterials/equipments
12	Describe the concept of Texturing and Modelling (Production 1) and Lighting and Rigging(Production 2)	The Candidate should able to; 12.1Create model for stop motion3D animation 12.2 Texture a character 12.3Demonstrate the concept ofLighting and Rigging 12.4 Demonstrate the use ofconcept of lighting to create a bright image
13	Describe the postproduction activities	The Candidate should able to; 13.1Describe the postproduction process ofanimation 13.2 Explain Exporting andRendering 13.3 Demonstrate how to performpost-production activities 13.4 Prepare a flow chart of postproduction activities andrequired materials/equipments
14	Gathering visual references to serve as aids during the animation process	The Candidate should able to; 14.1 Search and identifyfind character references that aid and inspire designs, including: Previously executed animation work-products Animations products available in the public domain Artwork and other human, animal and creature behavioral videos

15	Conceptualising creative ideas for animation	The Candidate should able to; 15.1Generate creative concepts and ideas for production using the concept artwork prepared by the designers, including: Character's look, colors, dressing, attitude and behavior Character expressions, emotions, poses Character movement (e.g. walk, run, jump) and timing (body mechanics) Costume designs Color, lighting concepts and shadow placement Environment 15.2 Present and discuss concepts with the Director, Art Director or Supervisors 15.3 Agree on the style of the work-product that would most appeal to the target audience, taking into account production timelines and requirements
16	Preparing a prototype 2D workproduct/pre-visualisation	The Candidate should able to; 16.1 Demonstrate the use of 2D tool for the storyboard composition (eg: positioning of the character with respect to the background/camera to create the desired animation) 16.2 Draw/source key frame drawings to establish reference points for poses
17	Preparing 2D animation end products	The Candidate should able to; 17.1 demonstrate the principles of design, 2D animation and film-making to create sequences and scenes/shots including cell animation or classic hand drawn animation, cut out animation and limited animation 17.2 Incorporate audio/music assets 17.3 Create shadows for animation using pre-defined lighting keys 17.4 Demonstrate the tool use for bring assets together to produce sequences and scenes/shots as per requirements and ensuring continuity 17.5 Create the hook-up/transition from one scene to another is effective
18	Preparing a prototype 3D work product/pre-visualisation	The Candidate should able to; 18.1demonstsrte the 3D tool for the storyboard for composition (eg: positioning of the character with respect to the background/camera to create the desired animation) 18.2 Prepare prototype work product/pre-visualisation
19	Preparing stop motion animation end-products	The Candidate should able to; 19.1 Move characters and construct/compose a shot as per the storyboard 19.2 Animate stop motion characters (puppets or models) in accordance with the script and any feedback from the Director/Producer/Supervisor

20	Applying stop-motion animation techniques	The Candidate should able to; 20.1Apply stop motion animation techniques including: Traditional frame-by-frame capture,Claymation, Cut-out using computer-generated tools
21	Reviewing, refining and storing end products	The Candidate should able to; 21.1 Explain and demonstrate the critically review animation produced, keeping in mind creative and design specifications and the production brief 21.2 Refine the output based on deviations observed and/or modifications required within requisite timelines Ensure that work-products meet quality standards (so that they can be approved with minimum iterations) and are delivered in requisite timelines 21.3 Organize, store and manage work-products into file formats using standard file naming conventions and maintain assets for further

Means of assessment 1 and 2
Skill performance is assess by conducting

i) Assignment for each module
ii) Written test for each module
iii) Final exam after completion of all module
iv) Practical exam for each module
v) Final practical exam after completion of all module
vi) Viva / Oral Exam
vii) Project report and presentation

Pass/Fail

Passing criteria is based on marks obtain in attendance record, term works , assignments, practical's performance, viva or oral exam, module test, practical exam and final exam

i) Minimum Marks to pass practical exam – 70%
ii) Minimum Marks to pass final exam – 70%
iii) Minimum Marks to pass viva / oral exam –70%
iv) Minimum Marks to pass Project report and presentation exam – 90%

SECTION 2

EVIDENCE OF LEVEL

Option A

Title/Name of qualification/component: 3D Animation and Special EffectsLevel:4			
NSQF Domain	**Outcomes of the Qualification/Component**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
Process	Manage electronic files and data safely, securely and according to specified requirements.	Job holder is expected to understand the script brief and requirements for post-production by application of basic creative principles and processes for Post Production by interpreting Knowledge of Editing Considering the core skills, computergenerated effects, colour grading, digital intermediate, screen conversion, rendering, rotoscopy, keying, matchmoving, compositing character properties to this outcome is pegged at Level 4.	**4**
Professional knowledge	• Job holder Analyse requirements for 3D animation processes based on given specifications and existing referencematerial. • Explain and Demonstrate Professional Knowledge include storyboarding, modelling, animation, rigging models, shading, mappingimages, lighting, rendering files, compositing layers, outputting, and designing backgrounds	Job holder's needs to have an understanding of basic editing principles and knowledge about the usage of the software such as adobe and photoshop, application of the audio and video effects. Job holders have factual knowledge of field of study which is editing. Therefore this is pegged at level 4.	**4**
Professional skill	• Develop creative elements according to specification using existing digital data.	Job holder is engaged in tasks such as computer generated effects, colour grading, digital intermediate, screen conversion, rendering, rotoscopy, keying, matchmoving, compositing Preparing materials and equipment for the post production process,	**4**

	• Develop digital data can include photographic images, pictures, sound, etc.	Collect raw footage/material and select relevant material that can be used for postproduction Needs to Create realistic effects through the use of software, he is responsible for carrying out his/her job. These activities are routine in nature with narrow range of application. Hence this is pegged at level 4.	
Core skill	• Evaluate3D animation and visual effects against specified requirements • Manage 3D animation productionaccordingto specified requirements.	The jobholder is needs to have Generic Skills of writing, Oral and Communication Skills related to their day to day animation work. Jobholder needs document postproduction requirements as a draft of assignment given by supervisor. Understand the project requirements/client requirement which requires clarity in oral and the written skills and while working on the content he needs to be aware of the social, political and natural environment. Therefore it is pegged at level 4.	**4**
Responsibility	• Check-up procedures to ensure that project objectives are finished within specified time frames aredeveloped. • Checkup proceduresto ensure that agreed ethicaland legal requirementsare met are drawn. • The compliance of 3D animation productswith specified requirementsis ensured. • Productscan includemodels, storyboards, 3D animation(includingobjects, characters, shading,lighting, images,and backgrounds),renderedfiles, and rigged models	Job holder is required to carry out functions such as typing; editing audio and video effects using software's such as photoshop, adope etc. In these activities job holder is doing the tasks independently without any supervision and he is responsible for his own learning at the task. Therefore it is pegged at level 4	**4**

SECTION 3
EVIDENCE OF NEED

What evidence is there that the qualification is needed?

- As per the industrial survey –cum-validation of curriculum, it is found that the animation industries need skilled candidate for 3D animation and Special Effects assignment related to various Entertainment and Media projects. (Industrial validation from various industries is attached as a supporting document).
- Also the trained candidate gets placed in various animation industries in Mumbai as well as in Hyderabad.
- The qualification is in existence since 2009 and IDEMI has trained more than 600 trainees as on date.

What is the estimated uptake of this qualification and what is the basis of this estimate?

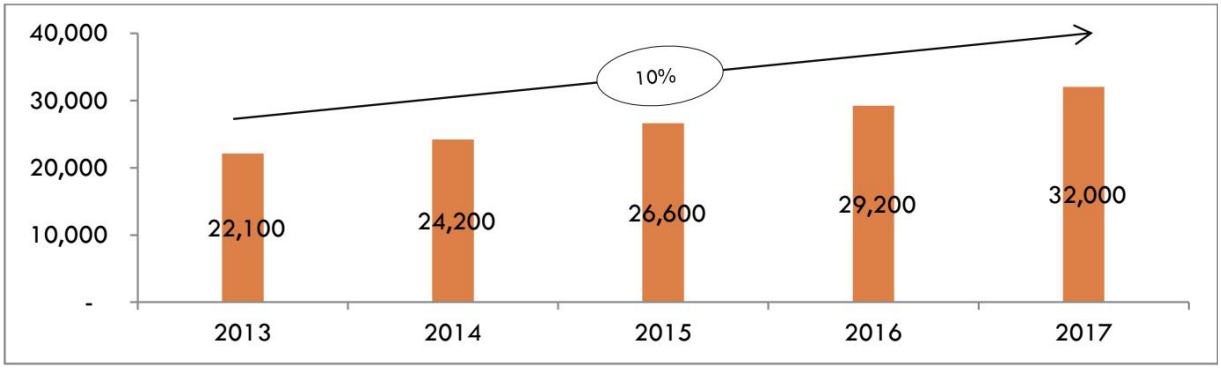
The size of the Animation Industry is estimated at INR 40 billion in 2013 and is expected to grow at a CAGRof 16% to reach ***INR 73 billon in 2017***. The animation industry is comprised of animation services' companies and production houses creating contentacross the following categories: ***Feature films , Television series, Advertisements***

The major animation techniques used include:***2D Animation, 3D Animation and Stop Motion***

Animation services companies take up low-end production and post-production work outsourced from studiosabroad and domestic companies in India. These companies make up for ~60% of the industry's revenues.

The current employment in the animation industry is ~22,000 individuals, comprising both permanentemployment at studios and freelancers.

The total employment over a five year period is given below



What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

The qualification is originally designed by curriculum committee comprising the training head, industrial expert, academic professional experts.

The work group under the guidance of curriculum development committee already conducted desk search as well as refers the qualification packs for as a supporting document for the mapping of curriculum.

As per the search it is found that, the certificate course is not available for the skill development of the candidates in Animation Sector under the Media and Entertainment Sector Skill Council.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The curriculum committee meeting for review will be in the month of Jan 2018 which comprising industrial expert, university professors with subject specialization.

The data used for revision or update will be impact analysis (student and industries) and new subject area opportunities, multiple entry and exits incorporated or RPL strategy implementations.

The curriculum review and updates, in consultation with industries and expert of respective domain, NOS approved by NSDA will also be referred to from time to time.

SECTION 4

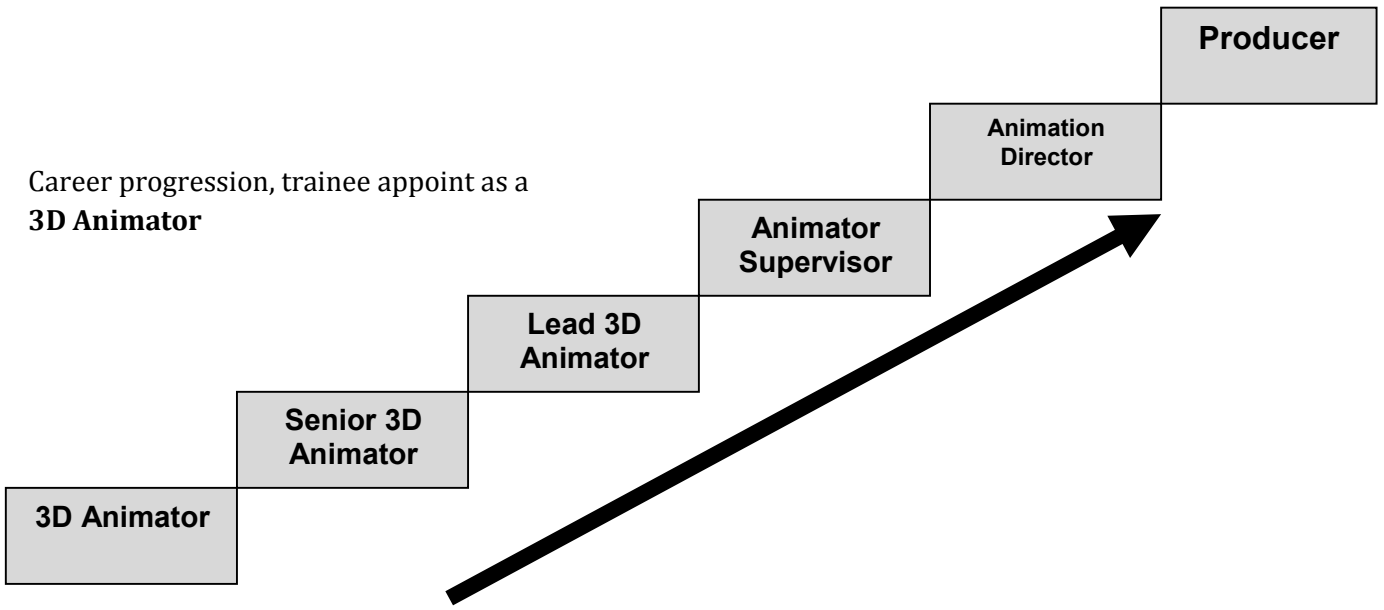
EVIDENCE OF RECOGNITION AND PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Qualifying trainee will obtain an IDEMI Certificate in '3D Animation and Special Effects'.After 2 year of experience give the opportunities to the trainees to work as Senior 3DAnimator as a career progression with this position and experience of 3 yearsgives career scope of Lead 3D Animator. Also he/she can become an entrepreneurin this sector after getting 3 year of experience. The below mention diagrams represent the vertical mobility for the job holder as a job progression in Animation Sector.

As a educational progression the trainee will be able to apply for (as per university entry scheme) B.Voc.(Multimedia and Animation)at Dr. BabasahebAmbedkarMarathwada University,Aurangabad.

Career progression, trainee appoint as a
3D Animator



Career progression, trainee appoint as a
VFX Compositor