



**NATIONAL COMPETENCY STANDARDS  
FOR  
VISUAL EFFECTS (VFX) ARTIST  
(NC3)**

**Department of Occupational Standards  
Ministry of Labour and Human Resources  
Thimphu Bhutan  
(Oct. 2018)**



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## **FOREWORD**

The Department of Occupational Standards of the Ministry of Labour and Human Resources is pleased to present National Competency Standards (NCSs) for Visual Effects (VFX) Artist. The standards represent the fruits of hard work and invaluable experiences gained by the department since its establishment in the latter half of 2003. The main aim of developing NCS is to set up a well-defined nationally recognized Vocational Qualifications System that will help set a benchmark for the Technical Vocational Education and Training (TVET) System in our country aligned to international best practices.

NCS is one of the base pillars in the Bhutan Vocational Qualifications Framework (BVQF) and is the first step in its implementation. The NCS are developed and revised to ensure that employees or vocational graduates possess and acquire the desired competencies required by industries and employers. In order to ensure this close match in supply and demand of competencies, NCS have been developed and revised in close consultation and partnership with industry experts and validated by the Technical Advisory Committees of the concerned economic sectors.

A vocational education and training system based on NCS shall ensure that delivered training is of a high quality and relevant to the needs of the labour market. As a result, future TVET graduates will be better equipped to meet the need and expectations of industries and employers. This positive impact on the employability of TVET graduates will enhance the reputation of vocational education and training and make it attractive to school leavers.

I gratefully acknowledge collaboration and the valuable contributions made by experts from industries during the consultation and validation processes of the standards. I look forward for continued engagement and participation of the industry and employers in the development of a quality assured demand driven TVET system and to build competent and productive national workforce that will contribute to the continued socio-economic progress of our country.

Director  
Department of Occupational Standards  
Ministry of Labour and Human Resource

## **Acknowledgement**

### **NATIONAL COMPETENCY STANDARDS FOR VISUAL (VFX) EFFECTS ARTIST**

**Validation date** : 26/10/2018

**Endorsement date:** 05/11/2018

**Date of Review** : 26/10/2021 (Max. 3 years)

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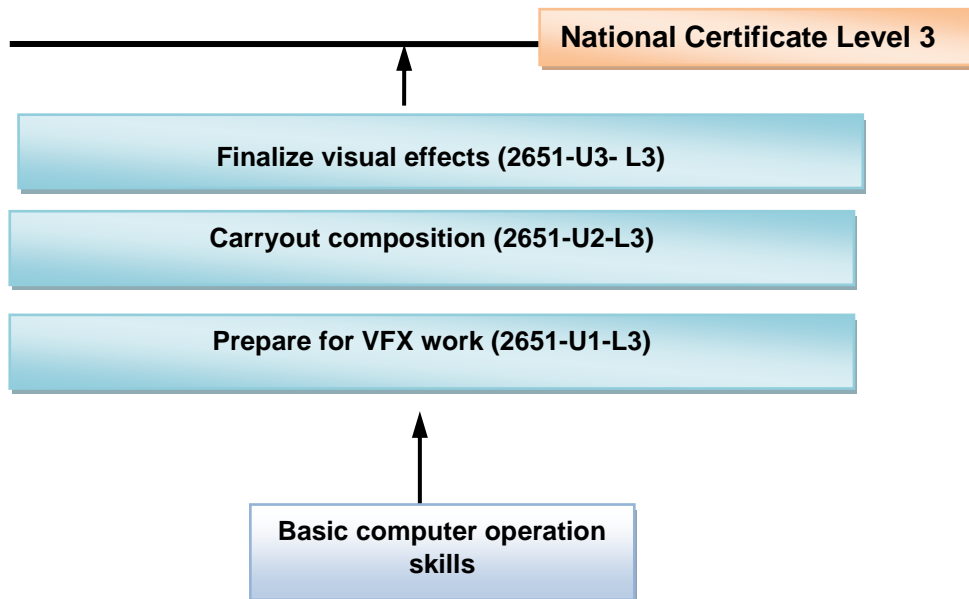
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## Packaging of Qualifications for Visual Effects (VFX) Artist

The National Competency Standards for the VFX Artist comprises of three units of competencies which are clustered into following levels of qualifications.





## Overview of the National Competency Standards

UNIT TITLE	ELEMENTS OF COMPETENCE
1. Prepare for VFX works	<ol style="list-style-type: none"><li>1. Determine the work requirement</li><li>2. Carryout pre-visualization</li><li>3. Divide shots</li></ol>
2. Carryout composition	<ol style="list-style-type: none"><li>1. Perform color corrections</li><li>2. Perform lighting of the scenes</li><li>3. Set projections</li><li>4. Add elements</li><li>5. Match perspectives</li></ol>
3. Finalize visual effects	<ol style="list-style-type: none"><li>1. Perform rendering</li><li>2. Finalize the shots</li></ol>

<b>UNIT TITLE:</b>	<b>Prepare for VFX works</b>
<b>DESCRIPTOR :</b>	This unit covers the competencies required to determine the work requirement and pre-visualization as per the standard procedures.
<b>CODE :</b>	2651-U1-L3
<b>ELEMENTS OF COMPETENCE</b>	<b>PERFORMANCE CRITERIA</b>
1. Determine the work requirement	<p>1.1 Obtain the work requirement from the relevant personnel as per the standard procedures</p> <p>1.2 Select <b>software</b> as per the shots requirement following standard procedures</p> <p>1.3 Set deadlines for the VFX work as per the standard procedures</p>
2. Carryout pre-visualization	<p>2.1 Create pre-visualization of the visual scenes as per the media requirement following standard procedures</p> <p>2.2 Conduct experiment to determine the suitable visual scenes as per the job requirement following standard procedures</p> <p>2.3 Match the lighting and camera of visual scene as per the media scene following standard procedures</p>
3. Divide shots	<p>3.1 Carry out pre-set as per the shot requirement following standard procedures</p> <p>3.2 Check the frames and resolutions as per the media shots following standard procedures</p>

	<p>3.3 Check Look up table(LUT) as per the movie shot following standard procedures</p> <p>3.4 Check color space as per the media scene following standard procedures</p> <p>3.5 Divide the shots as per the job requirement following standard procedures</p>
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RANGE STATEMENT	
<b>Software may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Nuke</li> <li>• Aftereffects</li> </ul>	<ul style="list-style-type: none"> <li>• Photoshop</li> </ul>
<b>Critical Aspects:</b>	
<ul style="list-style-type: none"> <li>• Select software as per the shots requirement following standard procedures</li> <li>• Match the lighting and camera of visual scene as per the media scene following standard procedures</li> </ul>	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> <li>• Ethics and Integrity</li> <li>• Occupational Health and safety regulations</li> <li>• Color theory</li> <li>• Lighting</li> <li>• Position and scaling</li> <li>• Basic computer knowledge</li> <li>• Basic camera knowledge</li> <li>• Photo editing software</li> <li>• Visual effect software</li> <li>• Noise and grains</li> <li>• Patent and copyright</li> <li>• Cultural Sensitivity</li> <li>• Relevant media rules and regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Team work</li> <li>• Communication skills</li> <li>• Problem solving</li> <li>• Negotiation</li> <li>• Time management</li> <li>• Visualization</li> <li>• Creativity</li> </ul>

<b>UNIT TITLE:</b>	<b>Carryout composition</b>
<b>DESCRIPTOR :</b>	This unit covers the competencies required to carry out composition works following standard procedures
<b>CODE :</b>	2651-U2-L3
<b>ELEMENTS OF COMPETENCE</b>	<b>PERFORMANCE CRITERIA</b>
1. Perform color correction	<p>1.1 Check gamma and gain as per the shots following standard procedures</p> <p>1.2 Match skin tone as per the shot following standard procedures</p> <p>1.3 Match edge blend as per the color correction following standard procedures</p> <p>1.4 Blend character and background scene as per the shots following standard procedures</p>
2 Perform lighting of the scene	<p>2.1 Select <b>types of lighting</b> based on the shots following standard procedures</p> <p>2.2 Apply lighting as per the pre and post production following standard procedures</p>
3 Set projections	<p>3.1 Set camera angle and motion as per the scene following standard procedures</p> <p>3.2 Perform tracking as per the shot requirement following standard procedures</p>
4 Add elements	4.1 Select <b>elements</b> as per the scene following

	<p>standard procedures</p> <p>4.2 Compile the elements as per the shot requirement following standard procedures</p> <p>4.3 Blend the elements with the shots following standard procedures</p> <p>4.4 Perform positioning and scaling of the elements as per the shots following standard procedures</p>
5 Match perspectives	<p>5.1 Perform positioning and scaling of the object as per the shots following standard procedures</p> <p>5.2 Determine angle of view as per the shot following standard procedures</p> <p>5.3 Check vanishing point and horizon line as per the shot following standard procedures</p>

RANGE STATEMENT	
<b>Types of lighting may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Shadow</li> <li>• Reflections</li> </ul>	<ul style="list-style-type: none"> <li>• Mode of the color</li> </ul>

<b>Elements may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Smoke</li> <li>• Fire</li> <li>• Dust</li> <li>• Sparks</li> </ul>	<ul style="list-style-type: none"> <li>• Rains</li> <li>• Snow</li> <li>• Lightening</li> </ul>
<b>Critical Aspects:</b>	
<ul style="list-style-type: none"> <li>• Perform color correction, lighting and perspective as per the job requirement following standard procedures</li> </ul>	

<b>UNDERPINNING KNOWLEDGE</b>	<b>UNDERPINNING SKILLS</b>
<ul style="list-style-type: none"> <li>• Ethics and Integrity</li> <li>• Occupational Health and safety regulations</li> <li>• Color theory</li> <li>• Create matte</li> <li>• Extraction of elements</li> <li>• Splines</li> <li>• Basic use of camera</li> <li>• Patent and copyright</li> <li>• Relevant media rules and regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Team work</li> <li>• Communication skills</li> <li>• Problem solving</li> <li>• Negotiation</li> <li>• Time management</li> <li>• Visualization</li> <li>• Creativity</li> </ul>

<b>UNIT TITLE:</b>	<b>Finalize the visual effects</b>
<b>DESCRIPTOR :</b>	This unit covers the competencies required to perform rendering and finalize the shots as per the standard procedures.
<b>CODE :</b>	2651-U3-L3
<b>ELEMENTS OF COMPETENCE</b>	<b>PERFORMANCE CRITERIA</b>
1. Perform Rendering	<p>1.1 Merge all the layers of shot where necessary as per the shot following standard procedures</p> <p>1.2 Pre- render the footage as per the sequence of shots following standard procedures</p> <p>1.3 Check the frame rate and format as per the shots following standard procedures</p> <p>1.4 Check the layers and icons and take necessary action as per the standard procedures</p>
2. Finalize the shots	<p>2.1 Review the footage and take necessary action as per the feedback received following standard procedures</p> <p>2.2 Store the files in the specified folder following standard procedures</p> <p>2.3 Ensure safety and security of the work as per the job requirement following standard procedures</p>



RANGE STATEMENT
<b>Critical Aspects:</b>
<ul style="list-style-type: none"> <li>• Follow occupational health and safety procedures</li> <li>• Check the frame rate and format as per the shots following standard procedures</li> </ul>

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> <li>• Ethics and Integrity</li> <li>• Occupational Health and safety regulations</li> <li>• Rendering procedures</li> <li>• Patent and copyright</li> <li>• Relevant media rules and regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Team work</li> <li>• Communication skills</li> <li>• Problem solving</li> <li>• Negotiation</li> <li>• Time management</li> <li>• Patience</li> </ul>



## **Annexure**

### **1.1 National Competency Standards (NCS)**

The National Competency Standards specify the skill, knowledge and attitudes applied to a particular occupation. Standards also specify the standards or criteria of performance of a competent worker and the various contexts in which work may take place. Standards provide explicit advice to assessors regarding the skill and knowledge to be demonstrated by candidates seeking formal recognition either following training or through work experience.

### **1.2 Purpose of National Competency Standards**

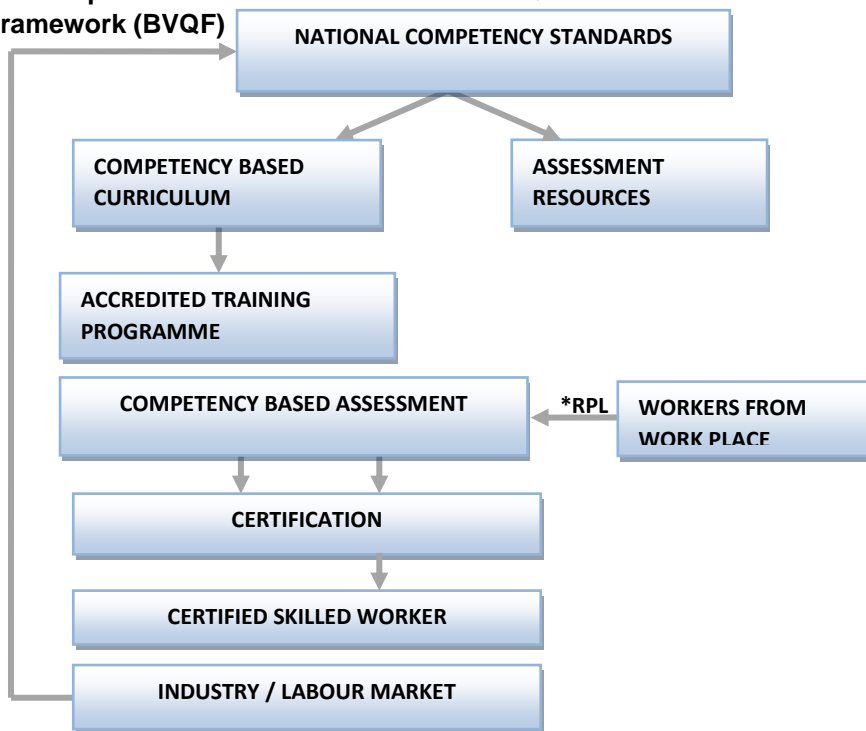
National Competency Standards serve a number of purposes including:

- Providing advice to curriculum developers about the competencies to be included in curriculum.
- Providing specifications to assessment resource developers about the competencies within an occupation to be demonstrated by candidates.
- Providing advice to industry/employers about job functions, which in turn can be used for the development of job descriptions, performance appraisal systems and work flow analysis.

### 1.3 Bhutan Vocational Qualifications Framework (BVQF)

Bhutan Vocational Qualifications Framework is an agreed system of Assessing, Certifying and Monitoring nationally recognized qualifications for all learning in the TVET sector against national competency standards, in training institutions, in the workplace, in schools or anywhere where learning takes place.

### 1.4 Components of the Bhutan Vocational Qualifications Framework (BVQF)



\* RPL = Recognition of Prior Learning

## 1.5 BVQF Levels

The Bhutan Vocational Qualifications Framework has three levels classified based on the competency of the skilled workers. The three levels are:

- National Certificate Level 3 (NC III)
- National Certificate Level 2 (NC II)
- National Certificate Level 1 (NC I)

### BVQF Level Descriptors

The qualification levels are decided based on level descriptors. The detail of the qualification level descriptor is as follows:

#### National Certificate Level 1

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> <li>• Are narrow in range.</li> <li>• Are established and familiar.</li> <li>• Offer a clear choice of routine responses.</li> <li>• Involve some prioritizing of tasks from known solutions.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic operational knowledge and skill.</li> <li>• Utilization of basic available information.</li> <li>• Known solutions to familiar problems.</li> <li>• Little generation of new ideas.</li> </ul>	<ul style="list-style-type: none"> <li>• In directed activity.</li> <li>• Under general supervision and quality control.</li> <li>• With some responsibility for quantity and quality.</li> <li>• With no responsibility for guiding others.</li> </ul>

## National Certificate Level 2

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> <li>• Require a range of well-developed skills.</li> <li>• Offer a significant choice of procedures requiring prioritization.</li> <li>• Are employed within a range of familiar context.</li> </ul>	<ul style="list-style-type: none"> <li>• Some relevant theoretical knowledge.</li> <li>• Interpretation of available information.</li> <li>• Discretion and judgments.</li> <li>• A range of known responses to familiar problems</li> </ul>	<ul style="list-style-type: none"> <li>• In directed activity with some autonomy.</li> <li>• Under general supervision and quality checking.</li> <li>• With significant responsibility for the quantity and quality of output.</li> <li>• With some possible responsibility for the output of others.</li> </ul>

## National Certificate Level 3

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> <li>• Requires a wide range of technical or scholastic skills.</li> <li>• Offer a considerable choice of</li> </ul>	<ul style="list-style-type: none"> <li>• A broad knowledge base which incorporates some theoretical concepts.</li> <li>• Analytical</li> </ul>	<ul style="list-style-type: none"> <li>• In self-directed activity.</li> <li>• Under broad guidance and evaluation.</li> <li>• With complete responsibility for quantity and</li> </ul>

<p>procedures requiring prioritization to achieve optimum outcomes.</p> <ul style="list-style-type: none"> <li>• Are employed in a variety of familiar and unfamiliar contexts.</li> </ul>	<p>interpretation of information.</p> <ul style="list-style-type: none"> <li>• Informed judgment.</li> <li>• A range of sometimes innovative responses to concrete but often unfamiliar problems.</li> </ul>	<p>quality of output.</p> <ul style="list-style-type: none"> <li>• With possible responsibility for the output of others.</li> </ul>
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## 1.6 PURPOSE

This qualification is designed for people interested in a career as Visual Effects (VFX) Artist at the Certificate level. It comprises of three units that cover the essential knowledge and skills required at workplace.

The pre-requisite for the candidates aspiring to pursue this certificate level course should have minimum educational requirement and basic computer operation skills.

It provides industry specific skills and demands a level of performance that will enable new recruits to the industry to be immediately productive.

## **1.7 CODING USED FOR NATIONAL COMPETENCY STANDARDS**

The coding and classification system developed in Bhutan is logical, easy to use, and also aligned with international best practises. The Bhutanese coding and classification system is based on the International Standard Classification of Occupations, 2008 (ISCO-08) developed by the International Labour Organisation (ILO).

The coding of the National competency standards forms the basis of the identification code for the Vocational Education and Training Management Information System (VET – MIS) both in terms of economic sector identification and that of the individual standard.

### **Coding the individual national competency standards**

Coding the individual skills standard has a multiple purpose:

- to identify the level,
- to identify to which module the standard belongs,
- to identify in which order the standard is clustered within that module.

A job can include a number of competencies described in the national competency standards.

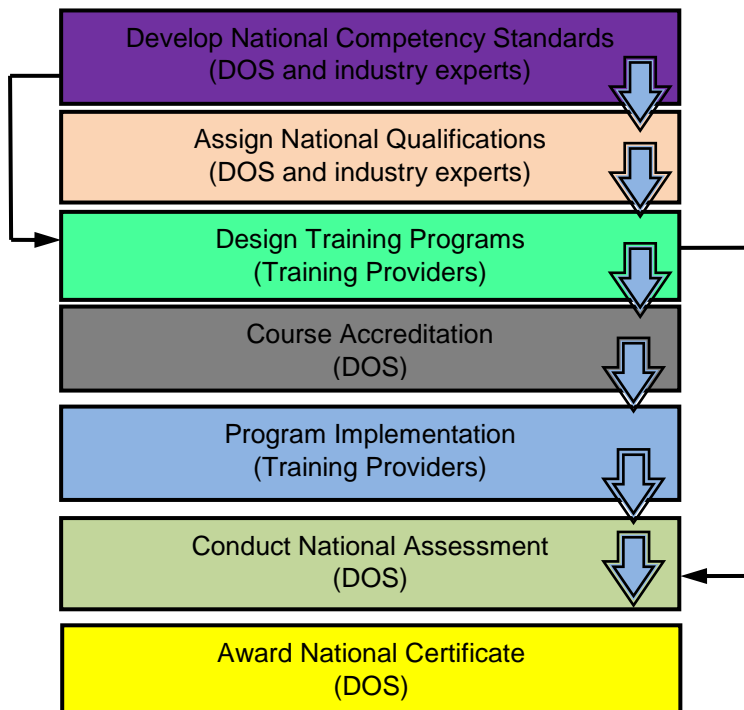
However, in order to follow a logical order, only national competency standards related to each other and following a logical sequence in terms of training delivery, from the simple to the complex, are clustered into a module. Some standards are so complex that they need to stand alone.

To illustrate with an example, the ILO assigns the code 2651 to the occupation of Visual Artist and related trades. Therefore, in the Bhutan's context, the occupation Visual Effects Artist has been assigned the code 2651 in the National Coding System. The first unit is assigned the code



U1. Levels are assigned the code L and follow a logical progression from the National Certificate Level 1 (NC I) to the National Certificate Level 3 (NC III). Therefore the National Certificate Level 1 is assigned the code L1.

### Implementation and operational procedures for National Competency Standards (NCS)



#### Key:

MoLHR – Ministry of Labour and Human Resources  
DOS – Department of Occupational Standards

## **1.8 ASSESSMENT GUIDE**

### **Form of assessments**

- Continuous assessment together with collected evidence of performance will be used.
- Evidence of the performance shall be based on practical demonstration.
- Knowledge can be assessed through diagrams, in writing or orally (viva-voce).

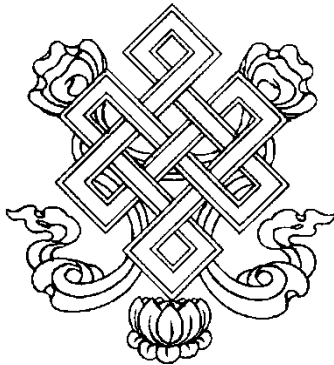
### **Assessment context**

- Competency may be assessed in the actual work place or in a simulated workplace setting.

### **Assessment condition**

- The candidate shall have access to all required tools, equipments, materials and documents.
- Candidate must complete the assessment in industry accepted time frame.





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