

Research Article

The Abolition of the Frame: A Paradigm Shift from the Centripetal Image to Immersive Space

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This paper investigates the transition from the framed image to the enveloping image in the history of Western visual perception. For centuries, the frame has served as a cognitive and semiotic device regulating the distance between subject and representation. The rise of immersive media, from fulldome projections to virtual reality, has disrupted this paradigm. The analysis traces the philosophical roots of the frame concept (Simmel, Derrida, Marin), the art historical genealogy of proto-immersive practices (from Renaissance quadraturismo to nineteenth century panoramas), the media theories of the transition (Youngblood, Manovich, Eugeni), and the psychological implications of immersion (aesthetic distance, flow state, perceptual frame effect). The final section discusses the new cinematic grammars required for frameless storytelling and surveys contemporary experimentation in the Italian and international context.

Keywords: immersion, frame, fulldome, aesthetic distance, somatic montage, expanded cinema, figurative space

1. Introduction

The entire edifice of Western art history and visual communication rests on a construct that is seldom examined on its own terms: the frame. From panel painting to the cinema screen, from the theatrical stage to the mobile device display, the frame has continuously operated as a boundary between the fictive space of representation and the tangible, physical space of the observer. Its function has never been merely ornamental. Rather, it has structured at a deep level the way human beings perceive, decode, and rationalize visual reality, establishing a fixed perspectival center of gravity and instituting an implicit pact of distance between the knowing subject and the contemplated object [1, 3].

The contemporary emergence of immersive media environments, culminating in 360-degree fulldome projections and virtual reality (VR) headsets, has fractured this millennial tradition. The image is no longer a confined artifact observed through a delimited aperture; it has become a three-dimensional environment that surrounds and absorbs the body of the spectator [6]. This abolition of the frame constitutes a visual and cognitive paradigm shift that media theorists have compared in magnitude only to the historical transition from the flat, symbolic painting of the Middle Ages to the invention of linear perspective in the Renaissance [8].

Linear perspective, codified mathematically by Leon Battista Alberti as a "window open onto the world," provided the observer with a fixed, geometrically calculable viewpoint that dominated spatial perception and artistic production until modernity [3]. The contemporary immersive image, as embodied in fulldome projection, dismantles this window. By abolishing physical and perceptual margins, it nullifies the unidirectional orientation of the gaze, dissolves the privileged position of the observer, and relocates the viewer inside the simulation itself, no longer as a passive spectator but as an active, embodied entity [12].

This paper explores the historical roots, philosophical implications, psychological impact, and emergent narrative grammars of this revolution. It examines how the enveloping image is rewriting the history of visual consciousness and dismantling centuries of the frame's epistemological hegemony.

2. Epistemology and Philosophy of the Frame

To grasp the full significance of the immersive revolution, one must first examine the philosophical and semiotic weight of the frame. Visual theory has long recognized its role as a fundamental syntactic and pragmatic operator [13].

2.1. The aporetic nature of the *parergon*

Georg Simmel described the frame through the dual metaphor of the "bridge" and the "door": an architectural and conceptual element that simultaneously connects and separates the world of art from the world of everyday life [3]. Louis Marin expanded this reflection by highlighting the frame's polysemic nature through a tripartite terminological distinction: *cadre* (structural framing), *cornice* (physical, tangible object), and *frame* (the abstract cognitive concept of categorization) [1].

The most radical reading, however, belongs to Jacques Derrida, who introduced the concept of the *parergon*. For Derrida, the frame possesses an intrinsically aporetic nature: it exists simultaneously inside and outside the work of art. It is not part of the pictorial representation proper, yet it does not belong entirely to the architectural space of the wall on which it hangs [1]. The frame defines the invisible boundaries that seal the visual text into its autonomy and instructs the spectator on the precise modalities of reception. This operation of isolation imposes what theorists have termed "frame despotism": a mechanism of visual power that naturalizes the optical illusion, confining it and compelling the viewer to concentrate exclusively on what the author has chosen to include within the perimeter [11].

2.2. Centripetal and centrifugal forces in visual composition

Contemporary visual aesthetics distinguishes between two opposing forces in image reception. The frame generates a centripetal orientation: it compels the eye to converge inward, toward the self-contained microcosm enclosed in the picture. Centripetal composition is reassuring because it guarantees that nothing of relevance exists beyond the visible border [13].

The immersive image, constitutively devoid of tangible physical boundaries, unleashes a centrifugal force. Operating as a "fragment of infinity," the immersive image ceaselessly suggests that the represented space extends without limit beyond immediate perception, enveloping the observer in every direction. As Corrain and Vannoni argue, "enveloping images constantly operate between moments of opening and closure," transforming the act of observing into an act of bodily presence [13]. The observer no longer looks at an image; the observer inhabits a visual ecosystem.

2.3. Plastic space versus figurative space

This ontological transition finds a theoretical basis in the work of Pierre Francastel. In *Lo spazio figurativo dal Rinascimento al cubismo* (1951), Francastel argued that the painted or projected space is never an objective reflection of external reality but a complex sociological construct, a system of signs shaped by the society and culture that produces it [14]. Renaissance perspective had created a rigid, unitary, and highly rational "figurative space" mirroring a society that believed in the mathematical dominion of man over the cosmos.

The historical avant-gardes, and to an exponentially greater degree contemporary immersive digital media, have replaced this figurative space with what Francastel would call a "plastic space": mobile, intrinsically tactile, fragmentary, and fluid. This new environment wraps around the spectator from every angle and relies not on the application of immutable rational models but on the fluid recording of phenomenological perception and embodied subjectivity [15]. The fulldome environment represents the technological fulfillment of this sociological insight: a space in which vision is not organized to be deciphered by a motionless, distant eye but navigated by a body in perpetual motion.

3. The Archaeology of Immersion: Historical Fractures of the Surface

The aspiration to transcend the limits imposed by the frame and dissolve the observer into the image is not an invention of the digital age. It is rooted in a long genealogy of artistic and architectural experimentation, driven by the persistent desire to merge the space of representation with the space of lived experience [13, 4].

3.1. *Quadraturismo* and *trompe-l'oeil*

While linear perspective codified pictorial space mathematically, the virtuoso techniques of *trompe-l'oeil* and *quadraturismo* sought from their very origins to subvert its boundaries through retinal deception. A seminal example is the painted oculus by Andrea Mantegna in the *Camera degli Sposi* (1465-1474, Mantova). Using the *di sotto in su* technique, Mantegna "opened" the solid architectural vault, creating an illusory oculus toward the sky that visually punctures the physical ceiling, bringing infinity into an enclosed space and beginning to corrupt the integrity of the architectural frame [4].

This drive toward spatial breakthrough continued through the High Renaissance and Mannerism, particularly with Correggio's *Assumption of the Virgin* in the Parma Cathedral (1522-1530), and reached its zenith in the Baroque era. Andrea Pozzo's ceiling frescoes in the Church of Sant'Ignazio in Rome (1685-1694) and the Jesuit Church in Vienna (1703) fused painting with real architectural moldings so completely that the structural boundaries disappeared, generating a visual vertigo that drew the worshipper into a supernatural, enveloping dimension [4, 13].

Period	Model	Frame Status	Subject-Space Relation
Middle Ages	Flat / symbolic painting	Physical container and material support	Frontal observation; purely symbolic space
Renaissance	Linear perspective	Visual field delimiter (Albertian window)	External observer with fixed vanishing point

Period	Model	Frame Status	Subject-Space Relation
Mannerism / Baroque	Quadraturismo / Trompe-l'oeil	Destabilization and concealment of architectural boundary	Illusion of uninterrupted spatial continuity; optical vertigo
19th century	Panorama	Absence of lateral margins; spherical enveloping limit	Visual envelopment; realistic illusion of presence
21st century	Fulldome / VR	Total abolition; seamless 360-degree image	Somatic immersion (6DoF); active exploration

Table 1. Historical evolution of the frame-observer relationship (author's elaboration).

3.2. The Sala dei Giganti and Franciscan immersion

Beyond the illusionistic sacred vaults, art history offers secular examples of total proto-immersion. The most pertinent for describing a pre-fulldome experience is the Sala dei Giganti frescoed by Giulio Romano at Palazzo Te, Mantova (1530-1535). Romano smoothed the physical corners of the room and painted walls, doors, fireplaces, and ceiling in unbroken continuity, plunging the visitor into the center of an apocalyptic catastrophe where the laws of gravity appear to fail [4, 13].

In the religious sphere, a collective form of frameless immersion materialized in the Franciscan Sacri Monti (Varallo, Orta, Varese), beginning in the late fifteenth century. These sites integrated life-size terracotta sculptures, perspective frescoes, and the surrounding natural landscape: the pilgrim literally walked inside the representation, experiencing what Grau [4] describes as a "proto-virtual reality of a theological character," deployed as a strategic instrument of Catholic Counter-Reformation visual propaganda.

3.3. The nineteenth century panorama

The decisive leap toward modernity occurred between the late eighteenth and early nineteenth century with the invention and commercialization of the Panorama, patented by the Irishman Robert Barker. Oliver Grau considers the panorama the preeminent visual mass medium before cinema: a continuous 360-degree painted canvas installed inside purpose-built rotundas in major European capitals [16].

Works of immense popularity such as Anton von Werner's *The Battle of Sedan* (1883) exploited the total absence of visible lateral borders, calculated zenithal lighting, and three-dimensional foreground dioramas to merge the spectator's position with the painted battlefield [16]. This configuration was designed to generate extreme emotional and physiological responses, transforming detached perception into an overwhelming sense of "presence." The panorama constitutes historically the most sophisticated spatial illusion achieved with traditional pictorial methods and the first genuine commercial abolition of the frame,

anticipating both conceptually and structurally today's fulldome projections [13].

4. Media Theory and the Transition: From Expanded Cinema to Digital Space

4.1. Expanded Cinema and the paleocybernetic era

The theoretical challenge to the monolithic dogma of the cinematic frame was mounted by Gene Youngblood in his seminal treatise *Expanded Cinema* (1970). This was the first major academic study to treat emerging video, holographic, and computational technologies not as mere technical expedients but as genuine extensions of human consciousness, capable of generating a "new expanded cinema" [22]. Youngblood theorized humanity's entry into a "paleocybernetic era," a period in which the medium would no longer confine itself to linear storytelling and dramatic realism but would aim instead to create a "synaesthetic cinema" and a network of Intermedia: a symbiotic human-machine interface designed for sensory expansion and the conscious evolution of the species.

In practical alignment with this theoretical vision, the artist Stan VanDerBeek built his Movie-Drome at Stony Point, New York: an immersive audiovisual dome for experimental performances that rejected the premise of a passive audience seated before a flat screen. The Movie-Drome planted the roots of today's fulldome at the intersection of artistic experimentation, cybernetics, space exploration, and multichannel communication [6].

4.2. Digital materialism and the crisis of representation

The definitive theoretical deconstruction of the cinematic frame was accomplished by Lev Manovich in *The Language of New Media* (2001). Manovich explored the deep identity crisis that digital technology inflicted upon the cinematic medium. Where for the entire twentieth century the defining characteristics of cinema were linear narrative projected onto a rectangular screen, with the advent of new media these were demoted to mere default options within an infinitely wider array of possibilities [25].

Through a methodological lens he termed "digital materialism," Manovich demonstrated how the fundamental principles of new media (numerical representation, modularity, automation, variability, and transcoding) irreversibly transformed the image [25]. When the spectator acquires the technological capacity to "enter" a navigable three-dimensional virtual space, the very concept of watching flat images confined in a frame loses its ontological centrality [26]. The interface mutates the nature of the interaction: from passive representation of a pre-recorded reality to real-time control and simulation of a computable virtual world [28]. In this shift, the frame as syntactic operator becomes obsolete, replaced by the fluidity of the database and the user interface.

4.3. Bystander media versus immersive media

The impact of this shift on human subjectivity has been further clarified in Italian media theory. The semiotician Ruggero Eugeni draws a categorical distinction between "bystander media" and "immersive media" [30]. Bystander media (the traditional painting, the printed photograph, cinema projected in a theater) presuppose the clear presence of a frame and entail a predominantly spatial, rigidly frontal involvement based on observation at a distance. Immersive media (fulldome, VR, augmented reality), by contrast, dismantle the frontal barrier and trigger a radically deeper, totalizing engagement: physical, perceptual, and somatic-experiential [30]. Immersion operates a complex manipulation of the temporal and spatial dimensions of the viewer's experience, transmuting analytical reception into an unequivocal and continuous sensation of bodily "presence" in the simulated world [13].

5. Phenomenology and Psychology of Immersion

What happens to the human mind when the safety anchor provided by the visual frame is removed? The psychology of art, neuroscience, and phenomenological theory offer important answers.

5.1. The eradication of aesthetic distance

In classical Western aesthetic theory, the proper appreciation of a work of art postulates an indispensable condition: the existence of "aesthetic distance." This psychological and cognitive distance, developed from the work of Edward Bullough in the early twentieth century, allows the spectator to contemplate an artwork by cleanly separating everyday reality and utilitarian needs from the purely artistic event [4]. As Bullough illustrated, when we watch a theatrical performance of *Othello*, aesthetic distance is the mechanism that prevents us from physically rushing onto the stage to save Desdemona, maintaining our reception of the fictive murder in a safe, reflective cognitive limbo [31].

Oliver Grau warns that frameless virtual environments work systematically to erase this aesthetic distance [21]. By addressing the physical body in a polysensory and pervasive manner, immersion induces the spectator to progressively abandon detached intellectual observation. The artificial environment floods the nervous system until the computer-generated world ceases to appear as a technological construct and is processed by primary neural networks as an intensely personal, lived experience [20]. This phenomenon raises urgent critical questions. For Grau and other theorists, the loss of aesthetic distance severely hampers the capacity for analytical reflection and independent critical judgment, as the conscious mind is continually overwhelmed by sensory illusion [32].

5.2. From contemplation to flow state

If aesthetic distance evaporates, it is rapidly replaced by another psychological condition: the state of flow theorized by Mihaly Csikszentmihalyi [5]. Flow is a state of total absorption in which intrinsic motivation, concentration, and cognitive participation generate an emotional intensity that abolishes awareness of external time and physical space. As Katja Kwastek observes, immersive and interactive digital art demands uninterrupted physical, gestural, or cognitive activity from the spectator, creating a cybernetic loop of actions and reactions that transforms the receiver from a passive consumer of a framed image into an essential co-generator of the aesthetic experience [5].

5.3. Frame effect and the physiology of perception

At a strictly neurobiological level, spatial perception is profoundly altered by the absence of geometric margins. Studies by Baranowski and Hecht have established that, even when the angular extent of the image is held constant, the addition of a dark spatial context or the absence of a visible luminous border (as occurs in darkened cinema models) increases in a statistically significant manner the physiological sensation of being absorbed by the work [35].

Research on optical illusions has studied the so-called "frame effect" extensively: the movement or sudden removal of a visible border generates massive, uncontrollable shifts in the perceived spatial position of objects within the visual field [36]. The human mind does not judge the position of objects according to objective world coordinates but constantly recalibrates reality on the basis of visible margins [37]. The fulldome environment, by removing the stable Euclidean coordinates of the rectangle, precipitates the cognitive apparatus into a state of spatial suspension in which motion parallax and visual vector processing assume total control.

6. Frameless Visual Grammar: Immersive Cinematography and Somatic Montage

The absence of a frame does not merely trigger philosophical or psychological changes. It imposes the total reinvention of the cinematic syntax consolidated over more than a century. In traditional cinema, the shot delimited by the frame constitutes the basic unit of meaning [40]. The director decides what to include and exclude: long shots to establish geography, medium shots to emphasize dialogue, and extreme close-ups to force empathy on isolated fragments [41]. In the fulldome arena, this authoritarian control of the director over the spectator's eye collapses instantly.

Parameter	Traditional Cinema	Immersive Cinema (Fulldome/VR)
Point of view	Fixed, imposed by the director	Exploratory, 360-degree peripheral freedom

Parameter	Traditional Cinema	Immersive Cinema (Full dome/VR)
Editing	Rapid continuity editing, jump cuts, temporal ellipses	Minimal cuts, slow dissolves, narrative journey mode
Camera movement	Dynamic, frequent shot changes	Slowed down, fluid vectors to prevent motion sickness
Attention direction	Constrained by the geometry of the luminous rectangle	Architected through visual cues: looming, high contrast, spatial sound

Table 2. Cinematic parameters: traditional cinema vs. immersive cinema (author's elaboration).

6.1. Guiding attention in a 360-degree visual ocean

Because the hemispherical fulldome environment covers a substantial portion of the peripheral visual field, spectators enjoy an unprecedented exploratory freedom. However, absolute freedom also means absolute entropy for anyone attempting to tell a story. Extended eye-tracking studies in dome environments reveal that in the absence of directional editing, audience attention tends to diverge chaotically within seconds if the scene remains static [43]. The academic and creative community has outlined new guidelines for fulldome filmmaking based on primordial neurological reflexes and pre-attentive mechanisms.

Temporal dilation and slowed pacing. Continuity editing and abrupt cuts, used abundantly in Hollywood cinema to manipulate attention rhythmically, prove disastrous in spherical immersion, inducing strong vertigo and motion sickness [43]. For this reason, narrative fulldome works favor the "narrative journey mode" or the long take, in which the observer "floats" through the environment in unbroken spatiotemporal continuity [13]. When a cut is unavoidable, editors resort to cutting on action, hiding the transition within a mass movement that temporarily captures the entire cognitive focus, rendering the brain "blind" to the discontinuity for fractions of a second [43].

The atavistic power of movement and looming. Without black borders to mechanically anchor the gaze, kinetic action becomes the primary tool for capturing the audience's foveal attention [43]. An isolated moving object in a static field instantly dominates attention over all other formal variables. Even more powerful is the looming effect: three-dimensional objects animated to appear on a collision course with the virtual camera, progressively enlarging, trigger primordial unconscious defensive reactions, attracting an absolute level of attention that cannot be consciously overridden.

Luminance, contrast, and faces as anchors. Biology assists immersive directors. Sudden variations in high luminosity and strong contrast, processed rapidly by the magnocellular pathway of the human brain, produce an instantaneous "pop-out" that renders certain details salient for the entire audience [43]. Social neuroscience confirms that human faces, and specifically the high-contrast areas of eyes and mouth, act as powerful evolutionary magnets for

spectator attention. Directing the gaze of a digital character toward a specific area of the dome will compel the audience to follow its line of sight instinctively.

6.2. Somatic montage as the syntax of envelopment

In theoretical and practical response to this spatial complexity, the scholar and filmmaker Clea T. Waite has elaborated the concept of "somatic montage" [45]. Extending and simultaneously surpassing the rigid theories of montage of attractions and disjunctive montage developed by Sergei Eisenstein, somatic montage uses the four-dimensional immersive space (three spatial dimensions plus temporal fluidity) to juxtapose semantic and narrative elements in a rigorously nonlinear manner. Instead of showing one detail after another sequentially on a flat screen, somatic montage distributes visual conflicts, metaphors, and dramatic action simultaneously across the entire hemispheric surface of the dome [45].

This choreographed fragmentation compels the spectator to interact not only mentally but physically with the artwork: turning the head, orienting the torso, and constructing a personal narrative not through passive intellect but through a deeply sensual, corporeal, and embodied motor experience [45]. In the paradigm of somatic montage, the physical human body ceases to be an immobile receptacle and becomes itself the primary cognitive bridge between the scattered fragments of light projected onto the dome and the final dramaturgical synthesis [46].

7. The Contemporary Landscape: Festivals, Experimentation, and the Italian Context

7.1. International artistic experimentation and world-building

In the field of experimental visual arts applied to fulldome, the historical boundaries between narrative experimental cinema, generative sculpture, sound design, and procedural animation are collapsing. Artists such as Maarten Isaac de Heer (*SWARM*), Lynn Tomlinson (*Reveries of Giverny*), and Frances Adair McKenzie (*The Orchid and the Bee*) systematically appropriate the "off-screen" space (which in the dome becomes total field) and exploit paradoxes of scale [49]. Narrative architecture abandons the familiar Aristotelian structures in favor of complex world-building and spatial logic.

The digital artist Jennifer Greb (Aalto University, Finland) has undertaken a project of recontextualizing classical art, traditionally framed on flat canvases, into immersive format. Through advanced computational animation in node-based software (Vuo, TouchDesigner) and particle simulations, Greb "expands" celebrated two-dimensional works such as Monet's *Water Lilies* and Hokusai's *The Great Wave*, reconstructing a tangible sense of volumetric atmosphere around the observer. The classical artwork is no longer passively hung on a museum wall but becomes a walkable, breathable habitat supported by dense

three-dimensional soundscapes [7].

7.2. The Italian context

Italy, the historical birthplace of both linear perspective and Baroque illusionism, occupies a prominent position in the European investigation of immersive video projection, generative algorithmic art, and monumental video mapping. Collectives such as Pixel Shapes have pushed the formal limits of projection mapping through projects of international resonance, including the *Farnesina Digital Art Experience* and numerous site-specific fulldome installations [52]. Studios such as Apparati Effimeri and the collective Fuse* are pioneers in the transformation of Big Data and biometric data into ephemeral cathedrals of laser light and spatialized sound within domes and theaters [53].

At the institutional level, the Fotonica Festival (Rome) introduced in December 2024 the "Chromosphere Dome" in the Alessandrino district: a geodesic dome designed to envelop the public with A/V performances launched from every geometric direction, featuring international artists including VJ Spetto, Monocolor, and the Touchy Toy Collective [54]. In northern Italy, the RAM film festival in Rovereto has established dedicated competitive sections for VR and fulldome projection, promoting the medium not as technological spectacle but as a mature instrument of anthropological inquiry and advanced aesthetic research [56].

Among historical institutions, the Planetario di Milano (managed by LOfficina) has modernized its educational mission by integrating artistic and emotional fulldome shows into its program, designed to bring the general public closer to the cosmos through the direct channels of visual emotion and perceptual envelopment, moving beyond the purely didactic format of traditional astronomical communication [57].

8. Conclusion

The entire history of Western art has methodically educated the human cognitive apparatus to filter the complexity of the empirical world by confining it within the boundaries of an artificial, static frame physically separated from the self. From Alberti's mathematically calculated *cadre*, through the authoritarian framing imposed by the cinema camera, to the luminescent screen of the television and the smartphone, modern individuals have relied on the rectangular border to confer sense, measure, scale, and order upon the endless simulation of reality [3]. The frame has served not merely as the perimeter of the image but as the invisible architecture of our psychological reassurance: the guarantee of critical distance from the represented world [33].

The emergence of fulldome media and the technological consecration of contemporary immersive digital arts represent an epistemological, philosophical, and neurobiological rupture with this tradition. Abolishing the frame is not a technological update, nor a quantitative engineering implementation of wider or more curved displays. It is an ontological paradigm shift. Just as the

irreversible passage from pre-Giottesque flat painting to the invention of linear perspective imposed a new, rational organization of the European gaze upon the universe, so the contemporary arrival of the fluid digital image that envelops and absorbs the observer imposes a new grammar of being [8].

This transition uproots the historical control that the director or the classical painter exercised over the passive fovea of the spectator, delegating to the viewer the extraordinary freedom, but also the arduous responsibility, of visual exploration and synthesis [43]. Total immersion dismantles contemplative aesthetic distance and intellectual objectivity, replacing them with the overwhelming power of emotional flow: the cold act of detached observation transforms into a condition of continuous "somatic presence" [5]. This nascent but potent medium demands the development and dissemination of a new artistic linguistics, embodied in the complex syntax of somatic montage and the spatialization of sound and image, capable of orchestrating peripheral, acoustic, and kinetic stimuli in curved three-dimensional space while renouncing forever the reassuring assistance of the sharp cut, flat sequentiality, and the comfortable orthogonal perimeter [45].

We no longer stand before the Albertian window gazing upon a reassuring other world from a place of safety. We have been cast inside, into the very nucleus of the simulated world. From Alberti's geometry to Mantegna's punctured illusion, from the dizzying *trompe-l'oeil* of Baroque cathedrals to the cyclopean painted panoramas of the nineteenth century, and finally to the luminous digital hemispheres of the Las Vegas Sphere and the independent geodesic domes of European media art festivals, the persistent human aspiration to fuse the artificial space of aesthetic representation with the fragile biological body of the spectator has, in the twenty-first century, found its complex, exhilarating, and profoundly problematic technical realization [13].

The future of global communication, pedagogical infrastructure, artistic speculation, and post-cinematic narrative experience will no longer be rigidly framed to be passively endured from an armchair. It will be walked, explored, breathed, and physically lived, from the exact center of a new, unexplored, and immensely powerful sensory horizon without visible limits or barriers. The era of the image that frames reality is closing; the era of the image that envelops, interrogates, and possesses us has just begun.

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